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Development and Application of a Water Supply Cost Analysis System. Volume II

ACT Systems, Inc.
Winter Park, FL

Prepared for

Municipal Environmental Research Lab.
Cincinnati, OH

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16. ABSTRACT

A cost analysis for system water supply utility management has been developed and implemented in Kenton County, Kentucky, Water District No. 1. The system description is contained in Volume I of the two volume report resulting from the study. This volume (Volume II) contains the program documentation for the cost analysis system.

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Volume II

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July 1980

DEVELOPMENT AND APPLICATION OF A WATER SUPPLY COST ANALYSIS SYSTEM

Volume II

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FOREWORD

The Environmental Protection Agency was created because the public and the federal government were increasingly concerned about the dangers of pollution on the health and welfare of the American people. Noxious air, foul water, and spoiled land are tragic testimonies to the deterioration of our natural environment. The complexity of that environment and the interplay among its components require a concentrated and integrated attack on the problem.

Research and development is that first step in problem solution, and involves defining the problem, measuring its impact, and searching for solutions. The Municipal Environmental Research Laboratory develops new and improved technology and systems: 1) to prevent, treat, and manage wastewater, solid and hazardous waste, and pollutant discharges from municipal and community sources; 2) to preserve and treat public drinking water supplies; and 3) to minimize the adverse economic, social, health, and aesthetic effects of pollution. This publication is a product of that research and is a most vital communications link between the researcher and the user community.

The Safe Drinking Water Act of 1974 establishes primary health-related standards and secondary aesthetic-related but nonenforceable guidelines for drinking water supplies. These standards will bring about a fundamental examination of the way water is handled before it is delivered to the consumer. Many of these changes will have an economic impact on the affected water utilities. This report describes a cost analysis system that was developed to analyze a water utility's operating and maintenance cost data. The cost analysis system provides the manager and other interested parties with an insight into a water utility's performance, and defines, by unique cost centers, those areas where costs can be monitored.

Volume I of this report outlines the background, development, and application of the cost analysis system. Volume II provides the computer program documentation developed to operate the system.

Francis T. Mayo
Director
Municipal Environmental Research Laboratory

ABSTRACT

The Environmental Protection Agency is concerned with the Safe Drinking Water Act's economic impact on the water supply industry. The Environmental Protection Agency initiated an ongoing program to gather and examine cost data from utilities across the country on which to establish a data base for water supply cost.

Experience has shown that although most utilities maintain an accounting system, the data provided by the systems are maintained in different formats and are therefore incompatible among utilities. Few systems provide continuous and adequate cost information directly.

As a result of this effort, the Environmental Protection Agency and many utility managers agree that there is a need for a cost analysis system having features especially applicable to the water supply industry. Based on the perceived need and because of the Act's emphasis on economics, the Drinking Water Research Division initiated a research program to develop standardized techniques for analyzing costs within a utility accounting framework. This program is described in a two-volume report. Volume I describes the development and functions of this system and its application to Kenton County, Kentucky, Water District No. 1.

Volume II contains the programming documentation and operating instructions for the cost analysis system.

This report is submitted by ACT Systems, Inc., in partial fulfillment of Contract No. 68-03-2506, Section II, under the sponsorship of the U.S. Environmental Protection Agency.

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ACKNOWLEDGMENTS

The staff of Kenton County, Kentucky, Water District No. 1 participated in the development and implementation of the cost analysis system described in this report. The cooperation and active support of Mr. Victor C. Fender, General Manager, and Mr. Malvern Connett, Office Manager, are gratefully acknowledged.

SECTION 1

INTRODUCTION

Volume I describes the water supply cost analysis system in detail from concept to final report generation. Volume II explains the computer operations and is intended to be used along with Volume I.

From its inception, the water supply cost analysis system was designed to have broad applications to the water supply industry while maintaining the capability of performing detailed checks of the input data and handling that data to meet the specific needs of a utility. This adds up to the requirement that the cost analysis system be both general and specific at the same time. In addition, it was recognized that the program must have the built-in capability to interface with many different utilities each with a different operating configuration and financial system.

Based on experience in examining the financial records of over 50 water utilities, it was also recognized that most utilities do not identify cost to the level required by the cost analysis system, and it is difficult to attempt a rapid change in the total accounting system of a utility during the implementation of a cost analysis module. Therefore, it was necessary to design, within the cost analysis system, flexible inputs and the capability of allocating costs when they are not specifically identified.

To accomplish the objectives of the cost analysis system, all cost input information must come from the utility's financial documentation. Since this information will vary from utility to utility, a concept was established for developing interface programs unique to each utility. These interface programs will accept the information in a specific utility format and convert it to a standardized format. However, the cost analysis system program cannot be entirely standard because each utility maintains a different chart of accounts and cost centers. For this reason, it is necessary to adjust the standard program to contain the chart of accounts and the cost centers on a utility-by-utility basis. Once this is accomplished, the program will handle all utilities in a standard mode while producing reports compatible with each utility's particular needs.

As described in Volume I, from a formatting standpoint, the principal variation between reports of different utilities will be in the Level IV and II reports which will reflect specific utility cost centers and chart of accounts. Level I and III reports will appear exactly the same in format but will be produced with each utility's individual data.

The following sections of this report provide the details of the cost analysis operating system.

SECTION 2

COST ANALYSIS SYSTEM COMPUTER OPERATIONS

SYSTEM FLOW DIAGRAMS

Figure 1 (a,b,c) represents the overall routine monthly operating flow diagram of the cost analysis system. In general, the cost analysis system takes the source input data, verifies it, allocates or assigns it to the proper cost centers, and produces the reports. There are actually fourteen separate modules of programs performing the necessary functions of the analysis and six modules performing the interface functions. The interface programs receive the input data in various formats, edit the data for validity, and condition the data for entry into the cost analysis system. It is from these interface programs that reports are generated to link the automated cost analysis system with the Kenton County Water District's financial reporting system. The interface edit programs perform such functions as verifying the validity of each account number to assure that it is appropriate, monitoring each cost for correct designation to a cost center, and allocating costs not assigned to proper cost centers. These cost elements are stored in a large matrix from which each element is withdrawn and utilized in the various reports. Figure 2 shows the types of information input to the system, the flow, and application of that information within the system. In addition, the figure includes a brief description of the types of reports generated.

COMPUTER PROGRAM DIRECTORY

The purpose of this directory is to record the location of each program within the Operating Instructions, Flow Diagrams, and Program Listings Sections of this report so that each program may be analyzed individually in its entirety.

The programs listed are in the order used to create the system and are not necessarily in their routine operating order. That order is recorded in the Routine Operating Sequence part of Section 2.

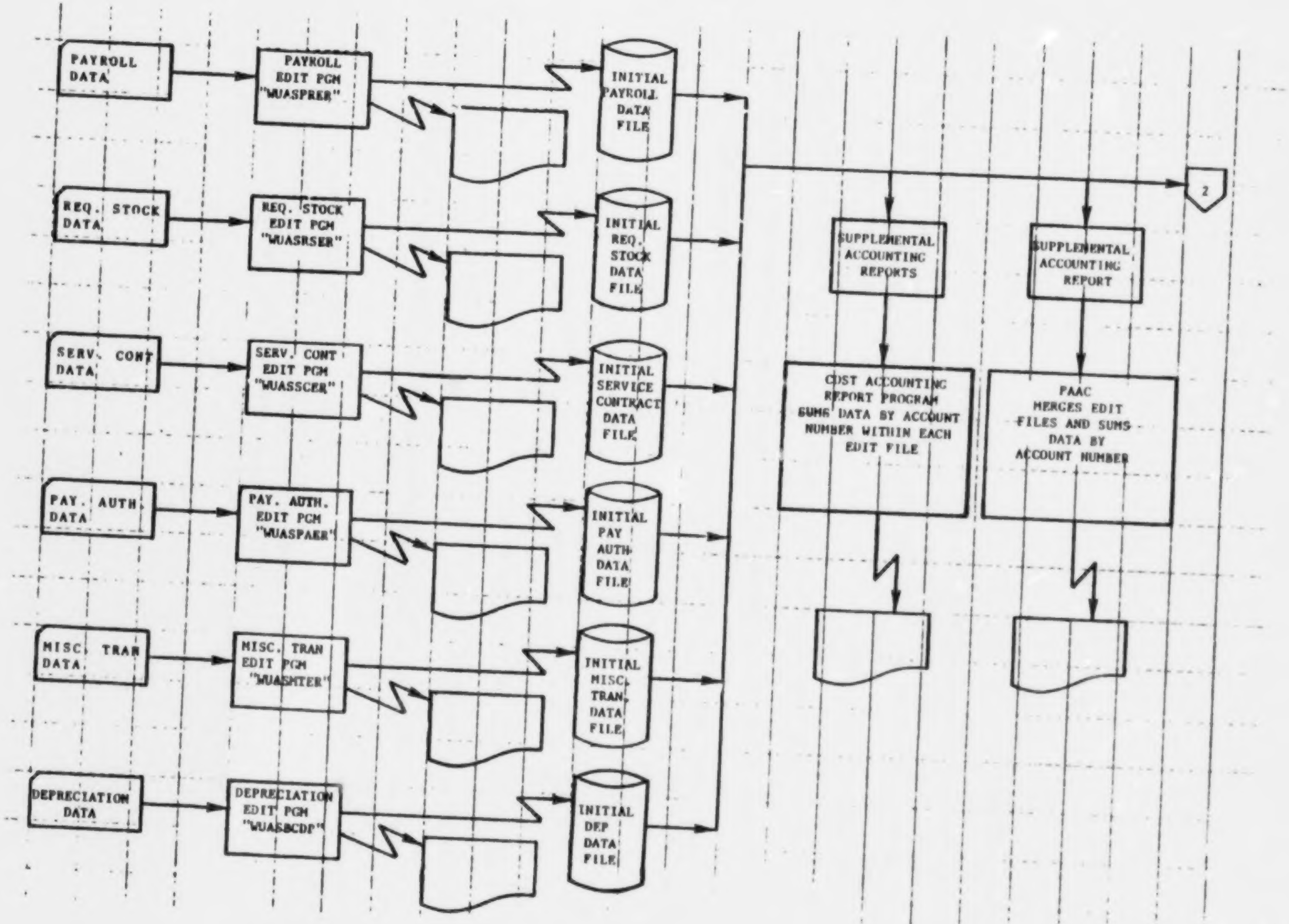

PAYROLL DATA
PAYROLL EDIT PGM "WUASPRER"
INITIAL PAYROLL DATA FILE
REQ. STOCK DATA
REQ. STOCK EDIT PGM "WUASRSER"
INITIAL REQ. STOCK DATA FILE
SERV. CONT DATA
SERV. CONT EDIT PGM "WUASSCER"
INITIAL SERVICE CONTRACT DATA FILE
PAY. AUTH. DATA
PAY. AUTH. EDIT PGM "WUASPAER"
INITIAL PAY AUTH DATA FILE
MISC. TRAN DATA
MISC. TRAN EDIT PGM "WUASMTER"
INITIAL MISC. TRAN. DATA FILE
DEPRECIATION DATA
DEPRECIATION EDIT PGM "WUASBCDP"
INITIAL DEP DATA FILE
SUPPLEMENTAL ACCOUNTING REPORTS
COST ACCOUNTING REPORT PROGRAM SUMS DATA BY ACCOUNT NUMBER WITHIN EACH EDIT FILE
SUPPLEMENTAL ACCOUNTING REPORT
PAAC MERGES EDIT FILES AND SUMS DATA BY ACCOUNT NUMBER
2

Figure 1(a). Cost analysis system routing operation flow diagram.

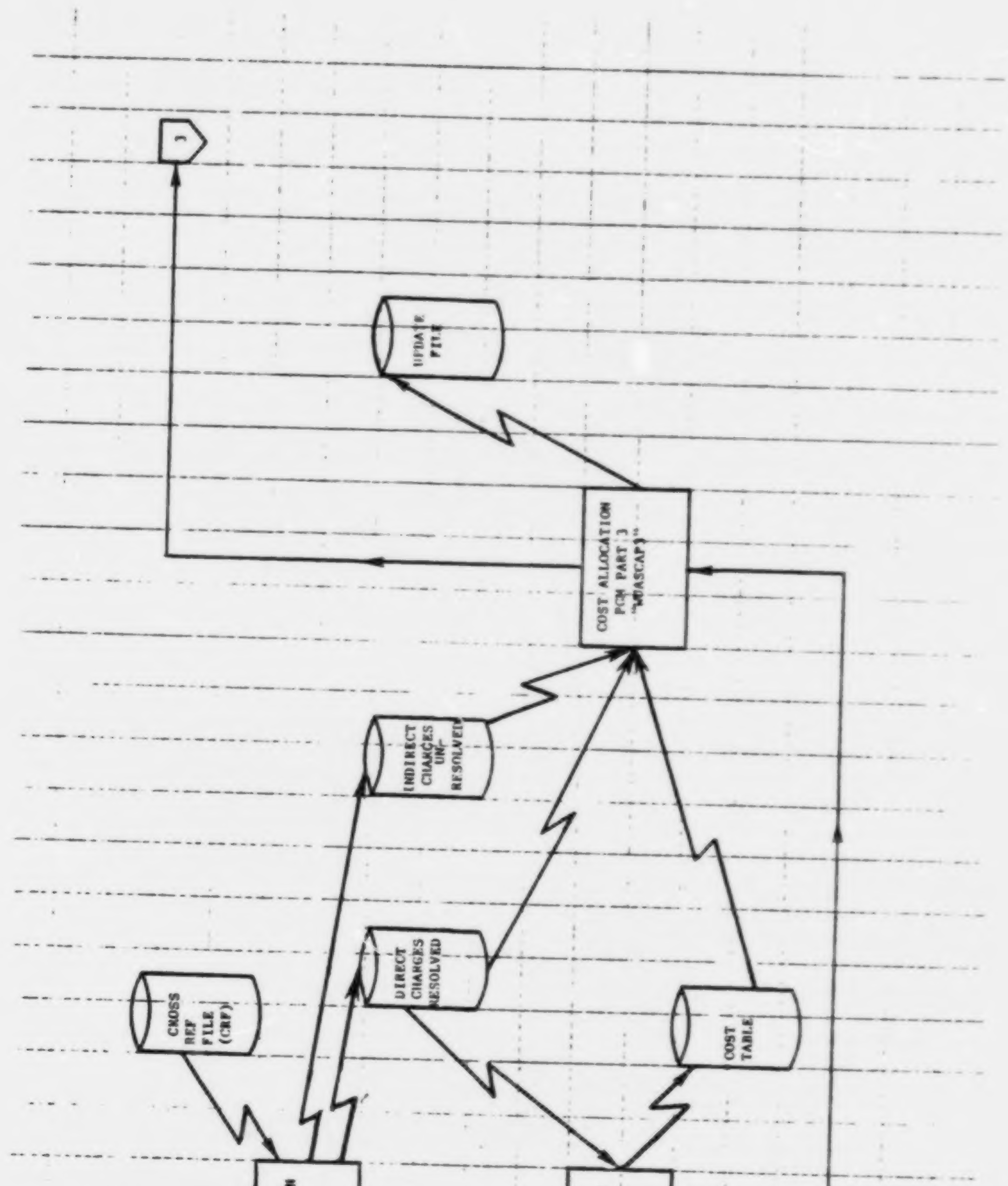

2
COST ALLOCATION PGM PART 1 "MUASCAP1"
CROSS REF FILE (CRF)
DIRECT CHARGES RESOLVED
INDIRECT CHARGES UN-RESOLVED
COST ALLOCATION PGM PART 2 "MUASCAP2"
COST TABLE
COST ALLOCATION PGM PART 3 "MUASCAP3"
UPDATE FILE
3

Figure 1(b)

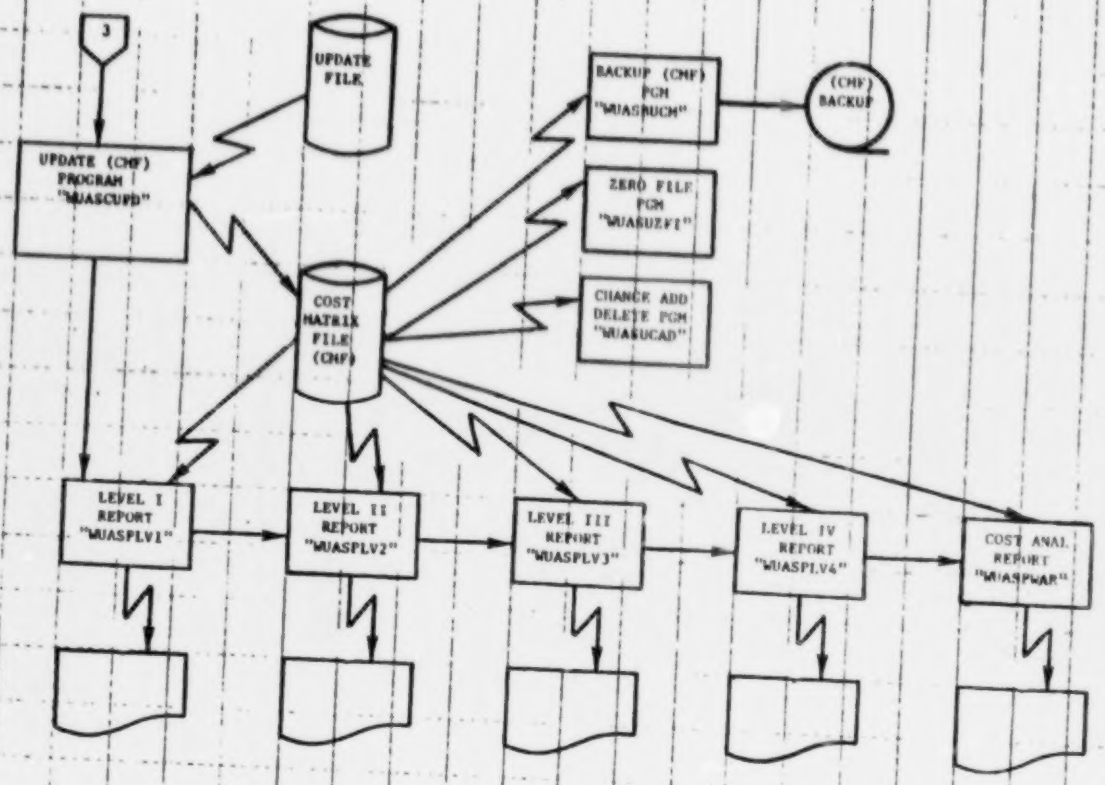
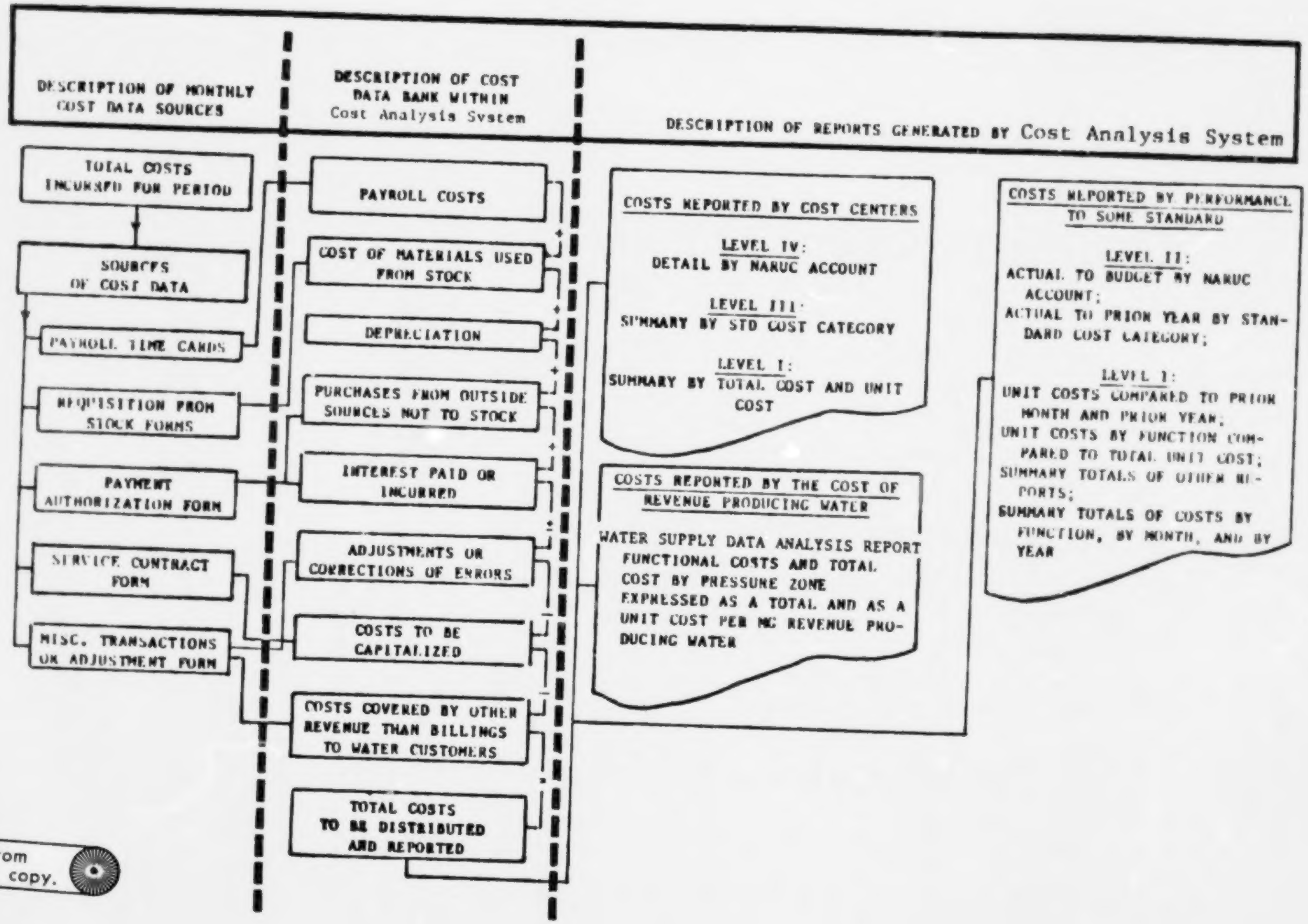

3
UPDATE FILE
UPDATE (CMF) PROGRAM "WUASCUPD"
COST MATRIX FILE (CMF)
BACKUP (CMF) PGM "WUASBUCM"
(CMF) BACKUP
ZERO FILE PGM "WUASUZFI"
CHANGE ADD DELETE PGM "WUASUCAD"
LEVEL I REPORT "WUASPLV1"
LEVEL II REPORT "WUASPLV2"
LEVEL III REPORT "WUASPLV3"
LEVEL IV REPORT "WUASPLV4"
COST ANAL REPORT "WUASPWAR"

Figure 1(c)


DESCRIPTION OF MONTHLY COST DATA SOURCES
DESCRIPTION OF COST DATA BANK WITHIN Cost Analysis System
DESCRIPTION OF REPORTS GENERATED BY Cost Analysis System
TOTAL COSTS INCURRED FOR PERIOD
SOURCES OF COST DATA
PAYROLL TIME CARDS
REQUISITION FROM STOCK FORMS
PAYMENT AUTHORIZATION FORM
SERVICE CONTRACT FORM
MISC. TRANSACTIONS OR ADJUSTMENT FORM
PAYROLL COSTS
COST OF MATERIALS USED FROM STOCK
DEPRECIATION
PURCHASES FROM OUTSIDE SOURCES NOT TO STOCK
INTEREST PAID OR INCURRED
ADJUSTMENTS OR CORRECTIONS OF ERRORS
COSTS TO BE CAPITALIZED
COSTS COVERED BY OTHER REVENUE THAN BILLINGS TO WATER CUSTOMERS
TOTAL COSTS TO BE DISTRIBUTED AND REPORTED
+
+
+
+
+
±
±
−
−
COSTS REPORTED BY COST CENTERS
LEVEL IV:
DETAIL BY NARUC ACCOUNT
LEVEL III:
SUMMARY BY STD COST CATEGORY
LEVEL I:
SUMMARY BY TOTAL COST AND UNIT COST
COSTS REPORTED BY THE COST OF REVENUE PRODUCING WATER
WATER SUPPLY DATA ANALYSIS REPORT FUNCTIONAL COSTS AND TOTAL COST BY PRESSURE ZONE EXPRESSED AS A TOTAL AND AS A UNIT COST PER MC REVENUE PRODUCING WATER
COSTS REPORTED BY PERFORMANCE TO SOME STANDARD
LEVEL II:
ACTUAL TO BUDGET BY NARUC ACCOUNT;
ACTUAL TO PRIOR YEAR BY STANDARD COST CATEGORY;
LEVEL I:
UNIT COSTS COMPARED TO PRIOR MONTH AND PRIOR YEAR;
UNIT COSTS BY FUNCTION COMPARED TO TOTAL UNIT COST;
SUMMARY TOTALS OF OTHER REPORTS;
SUMMARY TOTALS OF COSTS BY FUNCTION, BY MONTH, AND BY YEAR

Reproduced from best available copy.

Figure 2. Cost data flow through the cost analysis system.

	PROGRAM	SECTION 2 OPERATING INSTRUCTIONS Page No.	SECTION 4 FLOW DIAGRAMS Page No.	SECTION 5 PROGRAM LISTINGS Page No.
1.	WUASBCCT	9	78	125
2.	WUASBSAT	10	79	130
3.	WUASBFAT	12	80	134
4.	WUASBCRF	13	82	140
5.	WUASBCMF	14	83	148
6.	WUASBDPT	15	85	157
7.	WUASBCDP	16	86	161
8.	WUASSCER	17	88	167
9.	WUASMTER	18	90	174
10.	WUASPAER	19	92	182
11.	WUASRSER	20	94	191
12.	WUASPRER	21	96	200
13.	WUASCARP	22	98	209
14.	WUASPAAC	23	99	214
15.	WUASCAP1	24	101	219
16.	WUASCAP2	25	103	227
17.	WUASCAP3	26	104	231
18.	WUASUZFI	27	106	242
19.	WUASCUPD	29	108	245
20.	WUASPLV4	30	109	249
21.	WUASPLV3	32	114	284
22.	WUASPLV2	33	115	292
23.	WUASPLV1	34	116	311
24.	WUASPWAR	36	119	318
25.	WUASBUCM	37	120	331
26.	WUASUCAD	38	121	337

SYSTEM OPERATING INSTRUCTIONS

The purpose of this part of the report is to provide a general description of each program and give specific keypunching and system operating instructions. All routine listings should normally be printed on one-part paper; however, the number of report copies should be determined by the utility's requirements.

Operating instructions for each program begin with an objective or definition, and then the instructions are broken down into keypunching and operation instructions.

By following these instructions, the cost analysis system can be operated successfully. If a variation in procedure is encountered, contact the System Programmer.

"WUASBCCT"

OBJECTIVE: THIS PROGRAM CREATES A FILE THAT CONTAINS ALL THE VALID COST CENTERS AND THEIR DESCRIPTIONS USED IN THE COST ANALYSIS SYSTEM.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see section 3)

(1). ONE DATE-TITLE CARD.

(2). DATA USED TO BUILD THE COST CENTER TABLE FILE.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE THE DATE-TITLE CARD FOLLOWED BY THE COST CENTERS DATA BEHIND THE "//SYSIN DD *" CARD IN THE "WUASBCCT" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER LISTING THE DATA FILE.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASBSAT"

OBJECTIVE: THIS PROGRAM IS USED TO CREATE SPECIAL TABLE FILES THAT ARE USED THROUGHOUT THE COST ANALYSIS SYSTEM TO VERIFY OR REFERENCE CERTAIN DATA. CURRENTLY, THERE ARE THREE FILES THAT ARE CREATED BY THIS PROGRAM.

(1). BSAT.CCC	COST CENTER CONVERSION: USED TO CONVERT TWO-DIGIT COST CENTERS TO FOUR-DIGIT COST CENTERS.
(2). BSAT.CCT	COST CATEGORY TABLE: USED TO VERIFY THE EXISTENCE OF A VALID COST CATEGORY AND THE NAME OF THE CATEGORY.
(3). BSAT.FAT	FUND TITLE TABLE: USED TO VERIFY AND PROVIDE VALID FUND TITLES REQUIRED IN THE (CMF) BUILDING PROGRAM WUASBCMF.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see section 3)

(1). ONE DATE-TITLE CARD.

(2). DATA USED TO BUILD THE SPECIFIC FILE.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE THE DATE-TITLE CARD FOLLOWED BY THE SPECIFIC FILE DATA BEHIND THE "//SYSIN DD *" CARD IN THE "WUASBSAT" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER LISTING THE FILE.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASBFAT"

OBJECTIVE: THIS PROGRAM CREATES A FILE THAT IS USED IN BUILDING THE COST MATRIX FILE AND THE CROSS REFERENCE FILE. IN ADDITION, IT IS USED TO VERIFY THE EXISTENCE OF VALID ACCOUNT NUMBERS IN THE ANALYSIS SYSTEM. THIS FILE CONTAINS THE ACCOUNT NAME IN TWO (2) 20-CHARACTER FIELDS.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see section 3)

(1). ONE DATE-TITLE CARD.

(2). DATA USED TO BUILD THE FINANCIAL ACCOUNT TABLE FILE.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE THE DATE-TITLE CARD FOLLOWED BY THE FINANCIAL DATA BEHIND THE "//SYSIN DD *" CARD IN THE "WUASBFAT" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER LISTING THE FINANCIAL ACCOUNT TABLE FILE.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASBCRF"

OBJECTIVE: THIS PROGRAM CREATES A FILE THAT IS USED TO ALLOCATE COSTS TO COST CENTERS. IN ADDITION, THIS FILE IS USED BY THE "WUASBCMF" PROGRAM TO CREATE THE COST MATRIX FILE.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see section 3)

(1). ONE DATE-TITLE CARD.

(2). CROSS REFERENCE DATA NEEDED TO CREATE THE CROSS REFERENCE FILE (CRF).

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE THE DATE-TITLE CARD FOLLOWED BY THE CRF DATA BEHIND THE "//SYSIN DD *" CARD IN THE "WUASBCRF" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER LISTING THE CROSS REFERENCE FILE.

(4). THIS PROGRAM CAN BE RUN AS MANY TIMES AS REQUIRED BUT SHOULD ONLY HAVE TO BE RERUN WHEN NEW ACCOUNT NUMBERS AND/OR NEW COST CENTERS ARE ADDED TO THE COST ANALYSIS SYSTEM.

"WUASBCMF"

OBJECTIVE: THIS PROGRAM CREATES THE COST MATRIX FILE. GENERALLY, THIS PROGRAM SHOULD BE USED ONLY ONCE TO INITIATE THE FILE. HOWEVER, IF THE FILE IS DELETED, THE ORIGINAL FILE CAN BE RECREATED AND UPDATED FROM THE MOST CURRENT BACKUP TAPE USING PROGRAM "WUASUCAD".

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see section 3)

(1). DATE-TITLE CARD.

(2). REQUIRES NO DATA CARD INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). NOTE: MAKE SURE THE PROGRAM "WUASBCRF" IS SUCCESSFULLY COMPLETED PRIOR TO RUNNING THIS JOB BECAUSE THE FILE BUILT IN THAT PROGRAM IS USED TO CREATE THIS FILE.

(2). PLACE THE DATE-TITLE CARD BEHIND THE "//SYSIN DD *" CARD IN THE "WUASBCMF" JCL DECK.

(3). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(4). OUTPUT WILL BE ON ONE-PART PAPER.

(5). LISTING WILL SHOW WHAT THE FILE CONTAINS.

(6). THIS PROGRAM CAN BE RUN AS MANY TIMES AS REQUIRED.

"WUASBDPT"

OBJECTIVE: THIS PROGRAM IS USED TO CREATE A TABLE FILE OF THE YEARLY DEPRECIATION AMOUNTS ASSIGNED TO VARIOUS COST CENTERS. THE TABLE FILE WILL THEN BE USED IN THE PROGRAM "WUASBCDP" WHICH CONVERTS THE YEARLY DEPRECIATION AMOUNTS INTO A CURRENT DEPRECIATION AMOUNT.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). DATA FOR BUILDING THE DEPRECIATION TABLE.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE THE DATE-TITLE CARD FOLLOWED BY THE DEPRECIATION AMOUNTS BEHIND THE "//SYSIN DD *" CARD IN THE "WUASBDPT" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER LISTING THE THE DEPRECIATION AMOUNTS.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED BUT IS USUALLY RUN ONCE OR UNTIL A COST CENTER DEPRECIATION VALUE CHANGES.

"WUASBCDP"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ THE FILE WHICH CONTAINS THE YEARLY DEPRECIATION COSTS BY COST CENTERS THEN CALCULATE THE CURRENT PERIOD DEPRECIATION VALUES (MONTHLY, QUARTERLY, ETC.).

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE SPECIAL DATE-TITLE CARD.

(2). REQUIRES NO DATA CARD INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD BEHIND THE "//SYSIN DD *" CARD IN THE "WUASBCDP" JCL DECK.

(2). PUT DECK IN CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASSCER"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ AND EDIT THE SERVICE CONTRACT SOURCE DATA CARDS. THIS PROGRAM BUILDS A DATA FILE USED IN THE COST ANALYSIS SYSTEM.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). DATA FROM SERVICE CONTRACT SOURCE DOCUMENTS SHOULD BE PUNCHED AND VERIFIED.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD FOLLOWED BY THE SERVICE CONTRACT DATA BEHIND THE "//SYSIN DD *" CARD IN THE "WUASSCER" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER.

(4). UNDER THE COMMENT COLUMN OF THE LISTING, DESCRIPTIVE COMMENTS WILL BE PRINTED CONCERNING ERROR(S) FOUND IN THE DATA.

(5). IF ANY ERRORS WERE DETECTED, CORRECT THEM AND GO BACK TO (1).

(6). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASMTER"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ AND EDIT THE MISCELLANEOUS TRANSACTIONS SOURCE DATA CARDS. THIS PROGRAM BUILDS A DATA FILE USED IN THE COST ANALYSIS SYSTEM.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). DATA FROM MISCELLANEOUS TRANSACTIONS SOURCE DOCUMENTS SHOULD BE PUNCHED AND VERIFIED.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD FOLLOWED BY THE MISCELLANEOUS TRANSACTIONS DATA BEHIND THE "//SYSIN DD *" CARD IN THE "WUASMTER" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER.

(4). UNDER THE COMMENT COLUMN OF THE LISTING, DESCRIPTIVE COMMENTS WILL BE PRINTED CONCERNING ERROR(S) FOUND IN THE DATA.

(5). IF ANY ERRORS WERE DETECTED, CORRECT THEM AND GO BACK TO (1).

(6). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASPAER"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ AND EDIT THE PAYMENT AUTHORIZATIONS SOURCE DATA CARDS. THIS PROGRAM BUILDS A DATA FILE USED IN THE COST ANALYSIS SYSTEM.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). DATA FROM PAYMENT AUTHORIZATION SOURCE DOCUMENTS SHOULD BE PUNCHED AND VERIFIED.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD FOLLOWED BY THE PAYMENT AUTHORIZATION DATA BEHIND THE "//SYSIN DD *" CARD IN THE "WUASPAER" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER.

(4). UNDER THE COMMENT COLUMN OF THE LISTING, DESCRIPTIVE COMMENTS WILL BE PRINTED CONCERNING ERROR(S) FOUND IN THE DATA.

(5). IF ANY ERROR(S) WERE DETECTED, CORRECT THEM AND GO BACK TO (1).

(6). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASRSER"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ AND EDIT THE REQUISITION FROM STOCK SOURCE DATA CARDS. THIS PROGRAM BUILDS A DATA FILE USED IN THE COST ANALYSIS SYSTEM.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). DATA FROM STOCK REQUISTITION SOURCE DOCUMENTS SHOULD BE PUNCHED AND VERIFIED.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD FOLLOWED BY THE REQUISITION FROM STOCK DATA BEHIND THE "//SYSIN DD *" CARD IN THE "WUASPRSER" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER.

(4). UNDER THE COMMENT COLUMN OF THE LISTING, DESCRIPTIVE COMMENTS WILL BE PRINTED CONCERNING ERROR(S) FOUND IN THE DATA.

(5). IF ANY ERROR(S) WERE DETECTED, CORRECT THEM AND GO BACK TO (1).

(6). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASPRER"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ AND EDIT THE PAYROLL SOURCE DATA CARDS. THIS PROGRAM BUILDS A DATA FILE USED IN THE COST ANALYSIS SYSTEM.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). DATA FROM PAYROLL SOURCE DOCUMENTS SHOULD BE PUNCHED AND VERIFIED.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD FOLLOWED BY THE PAYROLL DATA BEHIND THE "//SYSIN DD *" CARD IN THE "WUASPRER" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER.

(4). UNDER THE COMMENT COLUMN OF THE LISTING, DESCRIPTIVE COMMENTS WILL BE PRINTED CONCERNING ERROR(S) FOUND IN THE DATA.

(5). IF ANY ERROR(S) WERE DETECTED, CORRECT THEM AND GO BACK TO (1).

(6). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASCARP"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ THE FILES CREATED BY THE INITIAL EDIT PROGRAMS AND THEN LIST THE COST BY ACCOUNT NUMBER WITHIN TYPE OF DATA (PAYROLL, SERVICE CONTRACT, ETC.).

OPERATING INSTRUCTIONS

(A) KEY PUNCH: REQUIRE NO DATE-TITLE OR DATA CARD INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PUT THE "WUASCARP" JCL DECK IN THE CARD READER AND READ THE DECK.

(2). OUTPUT SHOULD BE ON MULTI-PART PAPER DEPENDING ON THE NUMBER OF REQUIRED COPIES.

(3). UNDER THE COMMENT COLUMN OF THE LISTING, DESCRIPTIVE COMMENTS WILL BE PRINTED INDICATING ERROR(S) FOUND IN THE DATA.

(4). IF ERRORS ARE DETECTED, THE CORRECTIONS MUST BE MADE TO THE INITIAL INPUT DATA. THE APPROPRIATE EDIT PROGRAM MUST THEN BE RERUN.

(5). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASPAAC"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO SUM, WITHIN ACCOUNT NUMBER ORDER, THE INPUT DATA FILES CREATED BY THE INITIAL EDIT PROGRAMS.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). REQUIRES NO DATA CARD INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD BEHIND THE "//SYSIN DD *" CARD IN THE "WUASPAAC" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT CAN BE ON MULTI-PART PAPER.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASCAP1"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ THE FILES CREATED BY THE INITIAL EDIT PROGRAMS AND MERGE THESE FILES INTO TWO FILES; ONE FILE CONTAINING RECORDS OF DIRECT COST CENTERS AND CHARGES, AND THE OTHER FILE CONTAINING THE INDIRECT CHARGES.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). REQUIRES NO DATE-TITLE CARD INPUT.

(2). ONE UTILITY DESCRIPTION CARD. (UTILITY NAME OR NUMBER.)

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE UTILITY DESCRIPTION CARD BEHIND THE "//SYSIN DD *" CARD IN THE "WUASCAP1" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASCAP2"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ THE DIRECT CHARGES FILE (RESOLVED COSTS) CREATED BY THE "WUASCAP1" PROGRAM, SUM WITHIN COST CENTERS, AND CREATE A FILE THAT CONTAINS THE TOTAL AMOUNT CHARGED TO THE COST CENTERS.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). REQUIRES NO DATA CARD INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD FOLLOWING THE "//SYSIN DD *" CARD IN THE "WUASCAP2" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASCAP3"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO READ THE FILE CREATED BY THE "WUASCAP2" PROGRAM AND, USING A PREDETERMINED ALLOCATION METHOD, DETERMINE THE PERCENTAGES ASSOCIATED WITH EACH COST CENTER. WHEN THE RATIO OF DIRECT CHARGES TO TOTAL CHARGES IS DETERMINED, THE NON-DIRECT COST CREATED IN THE "WUASCAP1" PROGRAM ARE ALLOCATED TO COST CENTERS. THE NEW RECORDS ARE THEN ADDED TO THE RESOLVED COST CENTERS FILE CREATED IN "WUASCAP1".

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). REQUIRES NO DATA CARD INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD FOLLOWING THE "//SYSIN DD *" CARD IN THE "WUASCAP2" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER.

(4). THIS PROGRAM MAY NOT BE RERUN. IF PROGRAM IS NOT COMPLETED, YOU MUST START OVER AGAIN AT THE "WUASCAP1" LEVEL.

DO NOT RERUN THIS PROGRAM.

"WUASUZFI"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO ADJUST OR ELIMINATE COST BY ACCOUNT NUMBER IN CERTAIN DATA FIELDS THROUGHOUT THE COST MATRIX FILE (CMF). THIS PROGRAM MOVES THE CURRENT PERIOD'S COST TO THE PREVIOUS PERIOD'S COST FIELDS AND THEN ZEROS THE CURRENT PERIOD'S COST FIELD. THE PROGRAM CAN ALSO MAKE OTHER CHANGES TO THE (CMF) BY USING ONE OF THE FOLLOWING OPTION CARDS:

(1) BY INCLUDING A "PHYSICAL" OPTION CARD, IN ADDITION TO ACCOMPLISHING THE ABOVE ADJUSTMENT, THE CURRENT YEAR-TO-DATE COST WILL BE MOVED TO THE PREVIOUS YEAR-TO-DATE COST FIELDS AND THEN THE CURRENT YEAR-TO-DATE COST FIELDS ARE ZEROED.

(2) BY INCLUDING A "ZERO" OPTION CARD, ALL THE COST DATA FIELDS WILL BE ZEROED. (SHOULD BE USED NORMALLY FOR INITIAL SYSTEM TESTING PERIOD).

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED. (see Section 3)

(1) NO DATE-TITLE CARD IS NEEDED.

(2) FOR "PHYSICAL" OPTION--PUNCH THE WORD "PHYSICAL" IN THE FIRST SEVEN POSITIONS OF THE DATA CARD.

(3) FOR "ZERO" OPTION--PUNCH THE WORD "ZERO" IN THE FIRST FOUR POSITIONS OF THE DATA CARD.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

NOTE: USE CARE WHEN RUNNING THIS JOB, AS FILE COULD BE ERASED IN ERROR. THIS JOB MUST BE RUN PRIOR TO RUNNING THE PROGRAM "WUASCUPD" WHICH IS THE UPDATE UTILITY PROGRAM.

(1). IF USING AN OPTION CARD, PLACE THE OPTION CARD AFTER THE "//SYSIN DD *" CARD IN THE "WUZSUZFI" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON ONE-PART PAPER. ONLY A MESSAGE WILL BE PRINTED STATING WHAT TYPE OF OPTION WAS USED AND IF IT WAS COMPLETED.

(4). DO NOT RERUN THIS JOB...IF JOB SHOULD NOT BE COMPLETED OR THE WRONG OPTION WAS USED, THE FILE WILL HAVE TO BE REBUILT.

"WUASCUPD"

OBJECTIVE: THE PURPOSE OF THIS PROGRAM IS TO UPDATE THE COST MATRIX FILE (CMF) WITH CURRENT VALUES USING THE DIRECT CHARGES FILE CREATED BY THE "WUASCAP3" PROGRAM.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: REQUIRES NO DATE-TITLE OR DATA CARD(S) INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

NOTE: MAKE SURE PROGRAM "WUASUZFI" WAS EXECUTED PRIOR TO BEGINNING THIS JOB.

(1). PLACE THE "WUASCUPD" JCL DECK IN THE CARD READER AND READ THE DECK.

(2). OUTPUT CONSISTING OF A MESSAGE INFORMING THE OPERATOR THAT THE COST MATRIX FILE HAD BEEN UPDATED WILL BE ON ONE-PART PAPER.

(3). DO NOT RERUN THIS JOB. IF JOB ABORTS, CONTACT PROGRAMMER OR DATA BASE MANAGER BEFORE ATTEMPTING FURTHER ACTION.

"WUASPLV4"

OBJECTIVE: THIS LEVEL 4 REPORT PROGRAM IS BROKEN DOWN INTO THE FOLLOWING FOUR SEPARATE PROGRAMS: "WUASLV41", "WUASLV42", "WUASLV43", AND "WUASLV44". THE PROGRAM READS THE COST MATRIX FILE AND PRODUCES A LISTING OF THE COSTS BY ACCOUNT NUMBERS WITHIN COST CENTERS.

THE "WUASLV41" PROGRAM LISTS ALL COSTS PERTAINING TO THE ACQUISITION FUNCTION.

THE "WUASLV42" PROGRAM LISTS ALL COSTS PERTAINING TO THE TREATMENT FUNCTION.

THE "WUASLV43" PROGRAM LISTS ALL COSTS PERTAINING TO THE DELIVERY FUNCTION.

THE "WUASLV44" PROGRAM LISTS ALL COSTS PERTAINING TO THE SUPPORT SERVICE FUNCTION.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD IS NEEDED FOR EACH PROGRAM.

(2). REQUIRES NO DATA CARD INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARDS IN THE "WUASLV41", "WUASLV42", "WUASLV43", AND "WUASLV44" JCL DECKS.

(2). PUT THE DECKS IN THE CARD READER AND READ THE DECKS.

(3). OUTPUT WILL BE ON MULTI-PART PAPER DEPENDING UPON THE NUMBER OF REQUIRED COPIES.

(4). THESE PROGRAMS MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASPLV3"

OBJECTIVE: THIS LEVEL 3 REPORT PROGRAM READS THE COST MATRIX FILE, THEN SUMS THE CURRENT COSTS AND YTD COST BY COST CATEGORIES WITHIN FUNCTIONS OF ACQUISITION, TREATMENT, DELIVERY, SUPPORT SERVICES, TAXES, AND INTEREST.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). REQUIRES NO DATA CARD INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD BEHIND THE "//SYSIN DD *" CARD IN THE "WUASPLV3" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON MULTI-PART PAPER DEPENDING UPON THE NUMBER OF COPIES REQUIRED.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASPLV2"

OBJECTIVE: THIS LEVEL 2 REPORT PROGRAM READS THE COST MATRIX FILE AND PRODUCES A TWO-PART LISTING. THE FIRST PART IS A COST COMPARISON OF THE ACTUAL COSTS TO THE BUDGET BY ACCOUNT NUMBERS. THE SECOND PART IS A COST COMPARISON OF ACTUAL COSTS TO THE PREVIOUS YEAR'S COST.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). REQUIRES NO DATA CARD INPUT.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD BEHIND THE "//SYSIN DD *" CARD IN THE "WUASPLV2" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON MULTI-PART PAPER DEPENDING UPON THE NUMBER OF COPIES REQUIRED.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASPLV1"

OBJECTIVE: THIS LEVEL 1 REPORT PROGRAM READS THE COST MATRIX FILE, THEN SUMS THE CURRENT COSTS AND YTD COSTS BY COST CATEGORIES WITHIN FUNCTIONS OF ACQUISITION, TREATMENT, DELIVERY, SUPPORT SERVICES, TAXES AND INTEREST. THIS PROGRAM USES THESE VALUES TO PRODUCE A LIST OF THE COSTS IN TERMS OF WATER PRODUCTION UNITS. (USUALLY THE UNIT IS IN MILLIONS OF GALLONS.)

OPERATING INSTRUCTIONS:

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). ONE DATA CARD CONTAINING THE AMOUNT OF WATER USED FOR THE PREVIOUS MONTH IS NEEDED.

(3). ONE DATA CARD CONTAINING THE AMOUNT OF WATER USED FOR THE CURRENT MONTH IS NEEDED.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

NOTE: THIS PROGRAM CANNOT BE RUN UNTIL LEVEL 2 REPORT HAS BEEN SUCCESSFULLY COMPLETED SINCE PART OF THE DATA FOR THIS PROGRAM IS TAKEN FROM LEVEL 2 (DATA TAKEN FROM LEVEL 2 = ACTUAL TO BUDGET PERCENT).

(1). PLACE THE DATE-TITLE CARD FOLLOWED BY THE PREVIOUS MONTH WATER CARD AND THE CURRENT MONTH WATER CARD BEHIND THE "//SYSIN DD *" CARD IN THE "WUASPLV1" JCL DECK.

(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(3). OUTPUT WILL BE ON MULTI-PART PAPER DEPENDING UPON THE NUMBER OF COPIES REQUIRED.

(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASPWAR"

OBJECTIVE: THIS WATER SUPPLY DATA ANALYSIS PROGRAM READS THE COST MATRIX FILE, ANALYZES THE COST ASSOCIATED WITH WATER PRODUCTION WITHIN VARIOUS ZONES IN THE WATER UTILITY SYSTEM, AND THEN PRINTS A REPORT.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.
(2). ONE CURRENT ZONE-USAGE DATA CARD.
(3). ONE YTD ZONE-USAGE DATA CARD.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE DATE-TITLE CARD FOLLOWED BY THE CURRENT AND YTD DATA CARDS BEHIND THE "//SYSIN DD *" CARD IN THE "WUASPCAR" JCL DECK.
(2). PUT THE DECK IN THE CARD READER AND READ THE DECK.
(3). OUPUT WILL BE PRINTED ON MULTI-PART PAPER DEPENDING UPON THE NUMBER OF REQUIRED COPIES.
(4). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASBUCM"

OBJECTIVE: THIS PROGRAM IS USED TO LIST AND/OR BACK UP THE COST MATRIX FILE (CMF) ONTO A TAPE FILE. THE PROGRAM WILL NORMALLY PRODUCE A LISTING OF THE DATA ON THE CMF, HOWEVER, BY INSERTING AN OPTION CARD THE FILE WILL BE ALSO BACKED UP ON TAPE.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). ONE OPTION CARD CONTAINING THE WORD "BACK-UP" IN THE FIRST SEVEN POSITIONS OF THE CARD IF ACTUAL BACK-UP IS TO TAKE PLACE. OTHERWISE, NO OPTION CARD REQUIRED.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

(1). PLACE THE DATE-TITLE CARD FOLLOWING THE "//SYSIN DD *" CARD IN THE "WUASBUCM" JCL DECK.

(2). OPTION: IF COST MATRIX FILE IS TO BE BACKED UP ON TAPE THEN PLACE THE OPTION CARD AFTER THE DATE-TITLE CARD.

(3). PUT THE DECK IN THE CARD READER AND READ THE DECK.

(4). OUTPUT WILL BE ON ONE-PART PAPER.

(5). THIS PROGRAM MAY BE RUN AS MANY TIMES AS REQUIRED.

"WUASUCAD"

OBJECTIVE: THIS PROGRAM IS USED FOR MAKING CHANGES, ADDITIONS, AND/OR DELETIONS TO RECORDS IN THE COST MATRIX FILE (CMF). IN ADDITION, THE (CMF) MAY BE RE-CREATED FROM A (CMF) BACKUP TAPE.

OPERATING INSTRUCTIONS

(A) KEY PUNCH: THE FOLLOWING INPUT DATA ARE REQUIRED: (see Section 3)

(1). ONE DATE-TITLE CARD.

(2). ONE OPTION CARD WITH THE WORD '****UPDATE' IN THE FIRST 10 POSITIONS OF THE CARD.

(3). DATA FOR MAKING CHANGES, ADDITIONS, AND/OR DELETIONS. DATA RECORDS (CARDS) MUST BE IN THE EXACT IMAGE OF THE COST MATRIX FILE RECORDS.

(B) OPERATION: PROGRAM OPERATION/INFORMATION IS AS FOLLOWS:

NOTE: BY LEAVING OUT THE '****UPDATE' CARD, THE FILE WILL NOT BE PHYSICALLY CHANGED. ONLY A SIMULATION OF UPDATING WILL TAKE PLACE. THIS WILL ALLOW FOR A TEST RUN ON LARGE AMOUNTS OF DATA TO REVIEW CHANGES.

THERE ARE TWO (2) DIFFERENT OPERATING PROCEDURES AVAILABLE TO BE USED IN THIS PROGRAM, AS DESCRIBED BELOW.

(1) CHANGING, ADDING, DELETING PROCEDURE.

IN ORDER TO CHANGE A RECORD, THE ACCOUNT NUMBER, COST CENTER, AND COST CATEGORY FIELDS MUST BE IDENTICAL TO THOSE OF THE RECORD BEING CHANGED. IF THESE KEY FIELDS ARE INVALID OR CANNOT BE LOCATED WITHIN THE COST MATRIX FILE, THE CHANGE WILL BE CONSIDERED A NEW RECORD AND WILL BE ADDED TO THE EXISTING FILE. EACH AMOUNT FIELD MUST CONTAIN A VALUE, OTHERWISE, IF LEFT BLANK, THE FIELD WILL BE ZEROED.

IN ORDER TO ADD A NEW RECORD, THE ACCOUNT NUMBER, COST CENTER, AND COST CATEGORY FIELDS MUST BE COMPLETED. THE AMOUNT FIELDS SHOULD CONTAIN WHATEVER VALUES ARE REQUIRED. IN ADDITION, THE NEW RECORD MUST INCLUDE A UNIQUE MATCH CODE IN ORDER TO POSITION THE INFORMATION WITHIN THE OUTPUT REPORTS.

IN ORDER TO DELETE AN EXISTING RECORD, THE ACCOUNT NUMBER, COST CENTER, AND COST CATEGORY FIELDS MUST BE IDENTICAL TO THOSE OF THE RECORD BEING DELETED. ALL OTHER FIELDS MUST BE BLANK.

TO OPERATE THE CHANGE, ADD, OR DELETE PROGRAM:

(a) PLACE THE DATE-TITLE AND THEN THE OPTION CARD, IF USED, FOLLOWED BY THE DATA CARDS BEHIND THE "//SYSIN DD *" CARD IN THE "WUASUCAD" JCL DECK.

(b) PUT THE DECK IN THE CARD READER AND READ THE DECK.

(c) OUTPUT WILL BE ON ONE-PART PAPER LISTING ALL CHANGES, ADDS, OR DELETES. A COMMENT WILL STATE WHAT ACTION WAS TAKEN FOR EACH RECORD (i.e. RECORD CHANGED, ADDED, OR DELETED). IN ADDITION AT THE END OF THE LISTING, A COUNT OF ALL CHANGES WILL BE BE PRINTED.

(d) THIS JOB CAN BE RERUN, BUT USE CARE AS THE COST MATRIX FILE CAN BE DRASTICALLY CHANGED.

(2) THE PROCEDURE FOR RECREATING THE (CMF) FROM (CMF) BACKUP TAPE. NO DATA CARDS ARE USED IN THIS PROGRAM--ONLY THE DATE-TITLE, OPTION CARD, AND THE (CMF) BACKUP FILE. TO OPERATE THE RECREATING PROGRAM:

(a). PLACE THE DATE-TITLE CARD FOLLOWED BY THE OPTION CARD BEHIND THE "//SYSIN DD *" CARD IN THE "WUASUCAD" JCL DECK.

(b) PUT THE DECK IN THE CARD READER AND READ THE DECK.

(c) OUTPUT WILL BE ON ONE-PART PAPER, LISTING ALL THE RECORDS THAT WERE RECREATED.

(d) THIS JOB CAN BE RERUN IF REQUIRED.

ROUTINE OPERATING SEQUENCE

The following routine operating sequence should normally be followed unless otherwise stated in the special operating instructions. In operating the cost analysis system, it is important to note that each program instruction must be understood and that certain procedures be completed prior to performing the subsequent operational functions.

(A) Initial Edits - WUASPRER (Payroll), WUASRSER (Requisition from Stock), WUASPAER (Payment Authorization), WUASSCER (Service Contract), WUASMTER (Miscellaneous Transactions), and WUASBCDP (Depreciation).

Special Instructions:

(1) The WUASBCDP (Depreciation) program needs to be run only once until the depreciation values change.

(2) All other edit programs must be run even if current data is not supplied.

(3) The edit programs may be run in any order.

(B) Cost Allocation - WUASCAP1 (1st Allocation Program), WUASCAP2 (2nd Allocation Program), and WUASCAP3 (3rd Allocation Program).

(C) Updating Cost Matrix File - WUASUZFI (Zero File) and WUASCUPD (Update File).

Special Instructions:

(1) Each program must be run in the order listed.

(2) Do not re-run these programs without consulting with Systems Programmer.

(D) Print Output Reports - WUASLV41, WUASLV42, WUASLV43, WUASLV44 (Level 4 Reports); WUASPLV3 (Level 3 Report); WUASPLV2 (Level 2 Report); WUASPLV1 (Level 1 Report); and WUASPWAR (Water Supply Data Analysis Report).

Special Instructions:

(1) Programs may be run in any order, except WUASPLV1; because this program needs data from WUASPLV2.

(2) Programs may be run as many times as required.

(E) Back-Up Cost Matrix File - WUASBUCM (Back-Up file).

Special Instructions:

(1) Program may be run as many times as required.

(2) To produce a current listing of the Cost Matrix File only, run program WUASBUCM without "Back-Up" option card.

(3) To back-up the Cost Matrix File and then produce a listing run program WUASBUCM, with "Back-Up" option card.

SECTION 3

DATA FORMAT

KEYPUNCHING SOURCE DATA

The keypunch format is provided to describe the card image layout of all input data. This keypunch format should be used by the keypunch operator in setting-up drum cards and keypunching the data onto an 80-column card. Any variation in these formats should be discussed with the Systems Programmer.

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASBCCT

PROGRAM CARD NO. ________

TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1

SOURCE DOCUMENT BUILD COST CENTER TABLE

SOURCE ________ DEPT. ________ JOB NO. ________

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	COST CENTER	1	4	4	X				
	BLANK	5	5	1					
2	CC NAME 1	6	18	13	X	X	LJ		DESCRIPTION OF COST CENTER
	BLANK	19	19	1					
3	CC NAME 2	20	32	13	X	X	LJ		DESCRIPTION OF COST CENTER
	BLANK	33	80	48					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASBSAT (".CCC", ".CCT", ".FAT")

SHEET NO. 1 OF 1

PROGRAM CARD NO.

SOURCE DOCUMENT BUILDING SPECIAL ACCT. TABLES

TYPE OF CARDS 80 COLUMN

SOURCE DEPT. JOB NO.

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	SPECIAL ACCT. NO.	1	2	2	X	X			
	BLANK	3	3	1					
2	SPECIAL ACCT. NAME	4	23	20	X	X	LJ		
	BLANK	24	80	57					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASBFAT
PROGRAM CARD NO. ________
TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1
SOURCE DOCUMENT FINANCIAL ACCT. TABLE INPUT SHEET
SOURCE CARD ________ DEPT. ________ JOB NO. ________

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	ACCOUNT NO.	1	10	10	X	X	LJ		
	BLANK	11	11	1					
2	ACCOUNT NAME 1	12	31	20	X	X	LJ		ACCOUNT NO. DESCRIPTION 1
	BLANK	32	32	1					
3	ACCOUNT NAME 2	33	52	20	X	X	LJ		ACCOUNT NO. DESCRIPTION 2
	BLANK	53	53	1					
4	FUND TITLE NO.	54	55	2	X	X			FUND TITLE NO. (1 - 10)
	BLANK	56	56	1					
5	GENERAL ACCT. NO.	57	58	2	X	X			GENERAL ACCOUNT NO. (11 - 99)
	BLANK	59	59	1					
6	ACCT. NO. INTERNAL	60	63	4	X	X			INTERNAL ACCT. NO.
	BLANK	64	80	17					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASBCRF

PROGRAM CARD NO. 1

TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 2

SOURCE DOCUMENT CROSS REFERENCE FILE INPUT SHEET

SOURCE FIRST CARD DEPT. ____ JOB NO. ____

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	CARD NUMBER	1	1	1	X				MUST BE A '1'
	BLANK	2	2	1					
2	ACCOUNT NUMBER	3	12	10	X	X	LJ		
3	ALLOCATION CODE	13	13	1		X			
	BLANK	14	14	1					
4	COST CAT (NON LABOR)	15	16	2	X				
5	COST CAT (LABOR)	17	18	2	X				
	BLANK	19	20	2					
6	COST CENTER	21	24	4	X				
7	MATCH CODE	25	28	4	X				
8	COST CENTER	29	32	4	X				
9	MATCH CODE	33	36	4	X				
10	COST CENTER	37	40	4	X				
11	MATCH CODE	41	44	4	X				
12	COST CENTER	45	48	4	X				
13	MATCH CODE	49	52	4	X				
14	COST CENTER	53	56	4	X				
15	MATCH CODE	57	60	4	X				
16	COST CENTER	61	64	4	X				
17	MATCH CODE	65	68	4	X				
18	COST CENTER	69	72	4	X				
19	MATCH CODE	73	76	4	X				
	BLANK	77	80	4					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASBCRF

PROGRAM CARD NO. 2

TYPE OF CARDS 80 COLUMN

SHEET NO. 2 OF 2

SOURCE DOCUMENT CROSS REFERENCE FILE INPUT SHEET

SOURCE ADDITIONAL CARDS DEPT. ______ JOB NO. ______

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	CARD NUMBER	1	1	1	X				EITHER '2', '3', OR '4'
	BLANK	2	2	1					
2	ACCOUNT NUMBER	3	12	10	X	X	LJ		
3	COST CENTER	13	16	4	X				
4	MATCH CODE	17	20	4	X				
5	COST CENTER	21	24	4	X				
6	MATCH CODE	25	28	4	X				
7	COST CENTER	29	32	4	X				
8	MATCH CODE	33	36	4	X				
9	COST CENTER	37	40	4	X				
10	MATCH CODE	41	44	4	X				
11	COST CENTER	45	48	4	X				
12	MATCH CODE	49	52	4	X				
13	COST CENTER	53	56	4	X				
14	MATCH CODE	57	60	4	X				
15	COST CENTER	61	64	4	X				
16	MATCH CODE	65	68	4	X				
17	COST CENTER	69	72	4	X				
18	MATCH CODE	73	76	4	X				
	BLANK	77	80	4					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASBDPT
PROGRAM CARD NO.
TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1
SOURCE DOCUMENT BUILD DEPRECIATION TABLE
SOURCE DEPT. JOB NO.

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	COST CENTER	1	4	4	X				MUST BE 4-DIGIT NUMBER
	BLANK	5	5	1					
2	AMOUNT	6	15	10	X		RJ		YEARLY DEP. AMOUNT PIC 9(8)V99
	BLANK	16	16	1					
3	UTILITY CODE	17	17	1		X			BLANK = KENTON, "C" = COVINGTON
	BLANK	18	80	63					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASSCER

PROGRAM CARD NO. ____

TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1

SOURCE DOCUMENT SERVICE CONTRACT

SOURCE ____ DEPT. ____ JOB NO. ____

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	SOURCE CODE	1	1	1	X				MUST BE A '3'
	BLANK	2	2	1					
2	UTILITY CODE	3	3	1		X			BLANK=KENTON, "C"=COVINGTON
	BLANK	4	4	1					
3	CONTRACT NO.	5	8	4	X		RJ		
4	MATERIAL COST	9	16	8	X		RJ		PIC 9(8)V99
5	LABOR COST	17	24	8	X		RJ		PIC 9(8)V99
6	TRACTOR COST	25	32	8	X		RJ		PIC 9(8)V99
7	COMPRESSOR COST	33	40	8	X		RJ		PIC 9(8)V99
8	TRUCK(S) COST	41	48	8	X		RJ		PIC 9(8)V99
9	OTHER COST	49	56	8	X		RJ		PIC 9(8)V99
10	OVERHEAD COST	57	64	8	X		RJ		PIC 9(8)V99
11	BALANCE	65	72	8	X		RJ		PIC 9(8)V99
	BLANK	73	80	8					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASMTER
PROGRAM CARD NO. ______
TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1
SOURCE DOCUMENT MISCELLANEOUS TRANSACTIONS
SOURCE ______ DEPT. ______ JOB NO. ______

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	SOURCE CODE	1	1	1	X				MUST BE A '5'
	BLANK	2	2	1					
2	ENTRY NO.	3	5	3	X		RJ		PIC 9(3)
	BLANK	6	6	1					
3	ACCOUNT NO.	7	16	10	X	X	LJ		PIC X(10)
	BLANK	17	17	1					
4	COST CENTER	18	21	4	X		RJ		PIC 9(4)
	BLANK	22	22	1					
5	AMOUNT	23	32	10	X		RJ		PIC 9(8)V99
	BLANK	33	80	48					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASPAER

PROGRAM CARD NO. ________

TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1

SOURCE DOCUMENT PAYMENT AUTHORIZATIONS

SOURCE ________ DEPT. ________ JOB NO. ______

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	SOURCE CODE	1	1	1	X				MUST BE A '4'
	BLANK	2	2	1					
2	AUTHORIZATION NO.	3	12	10	X		RJ		PIC 9(10)
	BLANK	13	13	1					
3	ACCOUNT NO.	14	23	10	X	X	LJ		PIC X(10)
	BLANK	24	24	1					
4	COST CENTER	25	28	4	X		RJ		PIC 9(4)
	BLANK	29	29	1					
5	AMOUNT	30	39	10	X		RJ		PIC 9(8)V99
	BLANK	40	40	1					
6	TOTAL	41	50	10	X		RJ		PIC 9(8)V99
	BLANK	51	80	30					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASRSER

SHEET NO. 1 OF 1

PROGRAM CARD NO.

SOURCE DOCUMENT REQUISITION FROM STOCK

TYPE OF CARDS 80 COLUMN

SOURCE ____ DEPT. ____ JOB NO. ____

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	SOURCE CODE	1	1	1	X				MUST BE A '2'
	BLANK	2	2	1					
2	REQUISITION NO.	3	12	10	X		RJ		PIC 9(10)
	BLANK	13	13	1					
3	ACCOUNT NUMBER	14	23	10	X	X	LJ		PIC X(10)
	BLANK	24	24	1					
4	COST CENTER	25	28	4	X		RJ		PIC 9(4)
	BLANK	29	29	1					
5	AMOUNT	30	39	10	X		RJ		PIC 9(8)V99
	BLANK	40	40	1					
6	TOTAL	41	50	10	X		RJ		PIC 9(8)V99
	BLANK	51	80	30					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASPRER

PROGRAM CARD NO.

TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1

SOURCE DOCUMENT PAYROLL

SOURCE DEPT. JOB NO.

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	SOURCE CODE	1	1	1	X				MUST BE A '1'
	BLANK	2	2	1					
2	EMPLOYEE NUMBER	3	11	9	X				SOCIAL SECURITY NUMBER
	BLANK	12	12	1					
3	DATE	13	18	6	X				DDMMYY
	BLANK	19	19	1					
4	ACCOUNT NO.	20	29	10	X	X	LJ		PIC X(10)
	BLANK	30	30	1					
5	COST CENTER	31	34	4	X		RJ		PIC 9(4)
	BLANK	35	35	1					
6	TOTAL PAY	36	45	10	X		RJ		PIC 9(8)V99
	BLANK	46	46	1					
7	GROSS PAY	47	56	10	X		RJ		PIC 9(8)V99
	BLANK	57	80	24					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASCAP1

SHEET NO. 1 OF 1

PROGRAM CARD NO.

SOURCE DOCUMENT UTILITY DATA CARD FOR COST ALCTN. PT 1

TYPE OF CARDS 80 COLUMN

SOURCE ______ DEPT. ______ JOB NO. ______

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	UTILITY CODE	1	1	1		X			OPTION = BLANK = KENTON
	BLANK	2	80	79					or
									"C" = COVINGTON

OPTION CARD

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASUZFI
PROGRAM CARD NO.
TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1
SOURCE DOCUMENT OPTION FOR ZEROING CM FILE
SOURCE DEPT. JOB NO.

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	OPTION	1	6	6		X	LJ		OPTIONS = 'FISCAL" = 'ZERO"
	BLANK	7	80	74					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASPLV1
SHEET NO. 1 OF 1
PROGRAM CARD NO. 1
SOURCE DOCUMENT WATER FLOW SHEET
TYPE OF CARDS 80 COLUMN
SOURCE CARD DEPT. _____ JOB NO. _____

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	CURRENT RPW	1	10	10	X		RJ		PIC 9(7)V999
2	CURRENT TRTD WTR	11	20	10	X		RJ		PIC 9(7)V999
3	YTD RPW	21	30	10	X		RJ		PIC 9(7)V999
4	PREV YR RPW	31	40	10	X		RJ		PIC 9(7)V999
5	ACTUAL TO BUDGET	41	45	5	X		RJ		PIC 9(3)V99 *
	BLANK	46	80	35					

* TAKEN FROM LV II ACTUAL TO BUDGET PERCENTAGE

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASPWAR

PROGRAM CARD NO. 1

TYPE OF CARDS 80 COLLUMN

SHEET NO. 1 OF 1

SOURCE DOCUMENT WATER FLOW SHEET

SOURCE CARD DEPT. ______ JOB NO. ______

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	UTILITY NAME	1	2	2		X			"KE"=KENTON, "CO"=COVINGTON
2	SYSTEM	3	4	2	X				PIC 99
3	SERIES	5	6	2	X				PIC 99
4	PARALLEL	7	8	2	X				PIC 99
5	SERIES-PARALLEL	9	10	2	X				PIC 99
6	WATER SOLD	11	20	10	X		RJ		PIC 9 (7)V999
7	MILLION GALLONS	21	30	10	X		RJ		PIC 9 (7)V999
8	MILLION GALLONS	31	40	10	X		RJ		PIC 9 (7)V999
9	MILLION GALLONS	41	50	10	X		RJ		PIC 9 (7)V999
10	MILLION GALLONS	51	60	10	X		RJ		PIC 9 (7)V999
11	MILLION GALLONS	61	70	10	X		RJ		PIC 9 (7)V999
12	MILLION GALLONS	71	80	10	X		RJ		PIC 9 (7)V999

OPTION CARD

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASBUCM
PROGRAM CARD NO.
TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1
SOURCE DOCUMENT BACK UP OPTION CARD
SOURCE DEPT. JOB NO.

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	OPTION	1	7	7		X	LJ		MUST BE "BACK-UP"
	BLANK	8	80	73					

OPTION CARD

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASUCAD

PROGRAM CARD NO. ______

TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1

SOURCE DOCUMENT CHANGE, ADD, DELETE OPTION CARD

SOURCE ______ DEPT. ______ JOB NO. ______

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
	BLANK	1	4	4					
1	OPTION	5	10	6		X	LJ		MUST BE "UPDATE"
	BLANK	11	80	70					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME WUASUCAD

SHEET NO. 1 OF 1

PROGRAM CARD NO. ____

SOURCE DOCUMENT UTILITY, TO CHANGE, ADD, OR DLTE, CM RCDS.

TYPE OF CARDS 80 COLUMN

SOURCE ____ DEPT. ____ JOB NO. ____

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	MATCH CODE	1	4	4	X				
2	ACCOUNT NO.	5	14	10	X	X	LJ		
3	COST CENTER	15	18	4	X		RJ		
4	COST CATEGORY	19	20	2	X		RJ		
5	CURRENT COST	21	30	10	X		RJ		PIC 9(8)V99
6	PREVIOUS PRD CST	31	40	10	X		RJ		PIC 9(8)V99
7	YTD COST	41	50	10	X		RJ		PIC 9(8)V99
8	YEARLY BUDGET	51	60	10	X		RJ		PIC 9(8)V99
9	NOT USED	61	70	10	X		RJ		PIC 9(8)V99
10	PREV YR CST	71	80	10	X		RJ		PIC 9(8)V99

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME DATE-TITLE CARD

SHEET NO. 1 OF 1

PROGRAM CARD NO. ________

SOURCE DOCUMENT STANDARD DATE-TITLE CARD

TYPE OF CARDS 80 COLUMN

SOURCE ________ DEPT. ________ JOB NO. ________

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	DATE	1	18	18	X	X	LJ		MONTH DD, YYYY
2	TITLE	19	42	24	X	X	CEN		UTILITY NAME
	BLANK	43	80	38					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME DATE-TITLE CARD

PROGRAM CARD NO. SPECIAL

TYPE OF CARDS ______

SHEET NO. 1 OF 1

SOURCE DOCUMENT FOR PROGRAM WUASBDPT

SOURCE ______ DEPT. ______ JOB NO. ______

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	DATE	1	18	18	X	X	LJ		MONTH DD, YYYY
2	TITLE	19	42	24	X	X	CEN		UTILITY NAME
3	DEP. ACCT. NO	43	52	10	X	X	LJ		
	BLANK	53	80	28					

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME DATE-TITLE

PROGRAM CARD NO. SPECIAL

TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1

SOURCE DOCUMENT FOR PROGRAM WUASBCDP

SOURCE ______ DEPT. ______ JOB NO. ______

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	DATE	1	18	18	X	X	LJ		MONTH DD, YYYY
2	TITLE	19	42	24	X	X	CEN		UTILITY NAME
3	DEPRECIATION PRD	43	52	10		X	LJ		OPTIONS = MONTHLY
	BLANK	53	80	28					QUARTERLY
									YEARLY
									WEEKLY
									DEFAULT=MONTHLY

PUNCHING OR VERIFICATION INSTRUCTIONS

NAME DATE-TITLE
PROGRAM CARD NO. SPECIAL
TYPE OF CARDS 80 COLUMN

SHEET NO. 1 OF 1
SOURCE DOCUMENT FOR PROGRAMS WUASPLV2, WUASPCAR
SOURCE ____ DEPT. ____ JOB NO. ____

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	DATE	1	18	18	X	X	LJ		MONTH DD, YYYY
2	TITLE	19	42	24	X	X	CEN		UTILITY NAME
	BLANK	43	50	8					
3	FISCAL YEAR BEGIN	51	74	24	X	X	LJ		MONTH DD, YYYY
	BLANK	75	78	4					
4	NUMBER OF WEEKS	79	79	1	X				1=4, 2=5, 3=13, 4=26, 5=52
5	REPORT PERIOD	80	80	1	X				1=MONTHLY, 2=QUARTER, 3=HALF, 4=ANNUAL

SYSTEM FILE LAYOUT

The system file layout is provided to illustrate each cost accounting system program file.

FILE LAYOUT FORMAT

NAME WUASBCCT COST CENTER TABLE FILE

SHEET NO. 1 OF 1

FILE RECORD NO. 1

RECORD LENGTH 30

TYPE OF FILE INDEXED SEQUENTIAL

SOURCE COST CENTER DESCRIPTION SHEET

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	COST CENTER NO	1	4	4	X				KEY FIELD
2	COST CENTER NAME1	5	17	13	X	X			
3	COST CENTER NAME2	18	30	13	X	X			

FILE LAYOUT FORMAT

NAME WUASBSAT."XXX" SPECIAL ACCT. TABLES (".CCC",".CCT",".FAT", ".DPT") SHEET NO. 1 OF 2

FILE RECORD NO. 1 RECORD LENGTH 22

TYPE OF FILE SEQUENTIAL SOURCE SPECIAL ACCOUNTS INPUT DESCRIPTION SHEET

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	NO. OF RECORDS	1	4	4	X				
	BLANK	5	22	18					

FILE LAYOUT FORMAT

NAME WUASBSAT SPECIAL ACCT. TABLES

SHEET NO. 2 OF 2

FILE RECORD NO. 2

RECORD LENGTH 22

TYPE OF FILE SEQUENTIAL

SOURCE

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	SPECIAL ACCT. NO.	1	2	2	X				INDEXING KEY
2	SPECIAL ACCT. NAME	3	22	20	X	X			

FILE LAYOUT FORMAT

NAME WUASBFAT FINANCIAL ACCOUNT TABLE FILE

SHEET NO. 1 OF 1

FILE RECORD NO. 1

RECORD LENGTH 58

TYPE OF FILE INDEXED SEQUENTIAL

SOURCE FINANCIAL ACCOUNT INPUT DESCRIPTION SHEET

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	ACCOUNT NO.	1	10	10	X	X			KEY FIELD
2	ACCOUNT NAME 1	11	30	20	X	X			
3	ACCOUNT NAME 2	31	50	20	X	X			
4	FUND TITLE	51	52	2	X				
5	GENERAL ACCT.	53	54	2	X				
6	ACCOUNT NO. INTERNAL	55	58	4	X				

FILE LAYOUT FORMAT

NAME WUASBCRF CROSS REFERENCE FILE (CRF)

SHEET NO. 1 OF 1

FILE RECORD NO. 1

RECORD LENGTH 265

TYPE OF FILE INDEXED SEQUENTIAL

SOURCE CROSS REFERENCE INPUT DESCRIPTION SHEET

FIELD NO.	FIELD NAME	COLUMNS		NO. OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
1	ACCOUNT NUMBER	1	10	10	X	X			KEY FIELD
2	ALLOCATION CODE	11	11	1		X			
3	COST CAT (NON LABOR)	12	13	2	X				
4	COST CAT (LABOR)	14	15	2	X				
5	NO. OF COST CENTERS	16	17	2	X				
* 6									
	COST CENTER			4	X				
	MATCH CODE			4	X				

* THE FOLLOWING TWO ITEMS OCCURS 31 TIMES

FILE LAYOUT FORMAT

NAME WUASBCMF COST MATRIX FILE (CMF)

SHEET NO. 1 OF 1

FILE RECORD NO. ____________

RECORD LENGTH 80

TYPE OF FILE INDEXED SEQUENTIAL

SOURCE CROSS REFERENCE FILE

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	MATCH CODE	1	4	4	X				
2	ACCOUNT NO.	5	14	10	X	X			KEY FIELD
3	COST CENTER	15	18	4	X				
4	COST CATEGORY	19	20	2	X				
5	CURRENT COST	21	30	10	X				
6	PREVIOUS COST	31	40	10	X				
7	YTD COST	41	50	10	X				
8	YEARLY BUDGET	51	60	10	X				
9	NOT USED	61	70	10	X				
10	PREVIOUS YEAR COST	71	80	10	X				

FILE LAYOUT FORMAT

NAME WUASBUCM COST MATRIX FILE BACKUP (CMF BACKUP)

SHEET NO. 1 OF 1

FILE RECORD NO. ______

RECORD LENGTH 80

TYPE OF FILE SEQUENTIAL (TAPE)

SOURCE COST MATRIX FILE

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	MATCH CODE	1	4	4	X				
2	ACCOUNT NO.	5	14	10	X	X			
3	COST CENTER	15	18	4	X				
4	COST CATEGORY	19	20	2	X				
5	CURRENT COST	21	30	10	X				
6	PREVIOUS COST	31	40	10	X				
7	YTD COST	41	50	10	X				
8	YEARLY BUDGET	51	60	10	X				
9	NOT USED	61	70	10	X				
10	PREVIOUS YEAR COST	71	80	10	X				

FILE LAYOUT FORMAT

NAME EDIT FILES *

SHEET NO. 1 OF 3

FILE RECORD NO. 1

RECORD LENGTH 26

TYPE OF FILE SEQUENTIAL

SOURCE PAYROLL, PAY AUTH. REQ STOCK, SERVICE CONTRACT, DEPRECIATION, MISC. TRANS.

FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
	BLANK	1	1	1					
1	SORT SEQUENCE	2	2	1	X				IS LEFT BLANK
2	DATE	3	26	24	X	X			DATE FROM INPUT

* NOTE: EACH EDIT FILE HAS THE SAME FORMAT.

FILE LAYOUT FORMAT

NAME EDIT FILES
SHEET NO. 2 OF 3
FILE RECORD NO. 2
RECORD LENGTH 26
TYPE OF FILE SEQUENTIAL
SOURCE

FIELD NO.	FIELD NAME	COLUMNS		NO.OF COLUMNS	TYPE		JUS.	VER.	REMARKS AND INSTRUCTIONS
		FROM	THRU		N	A			
	BLANK	1	1	1					
1	SORT SEQUENCE	2	2	1	X				IS THE SOURCE CODE FROM INPUT
2	TITLE	3	26	24	X	X			IS THE UTILITY NAME

FILE LAYOUT FORMAT

NAME EDIT FILES

SHEET NO. 3 OF 3

FILE RECORD NO. (DATA) 3

RECORD LENGTH 26

TYPE OF FILE SEQUENTIAL

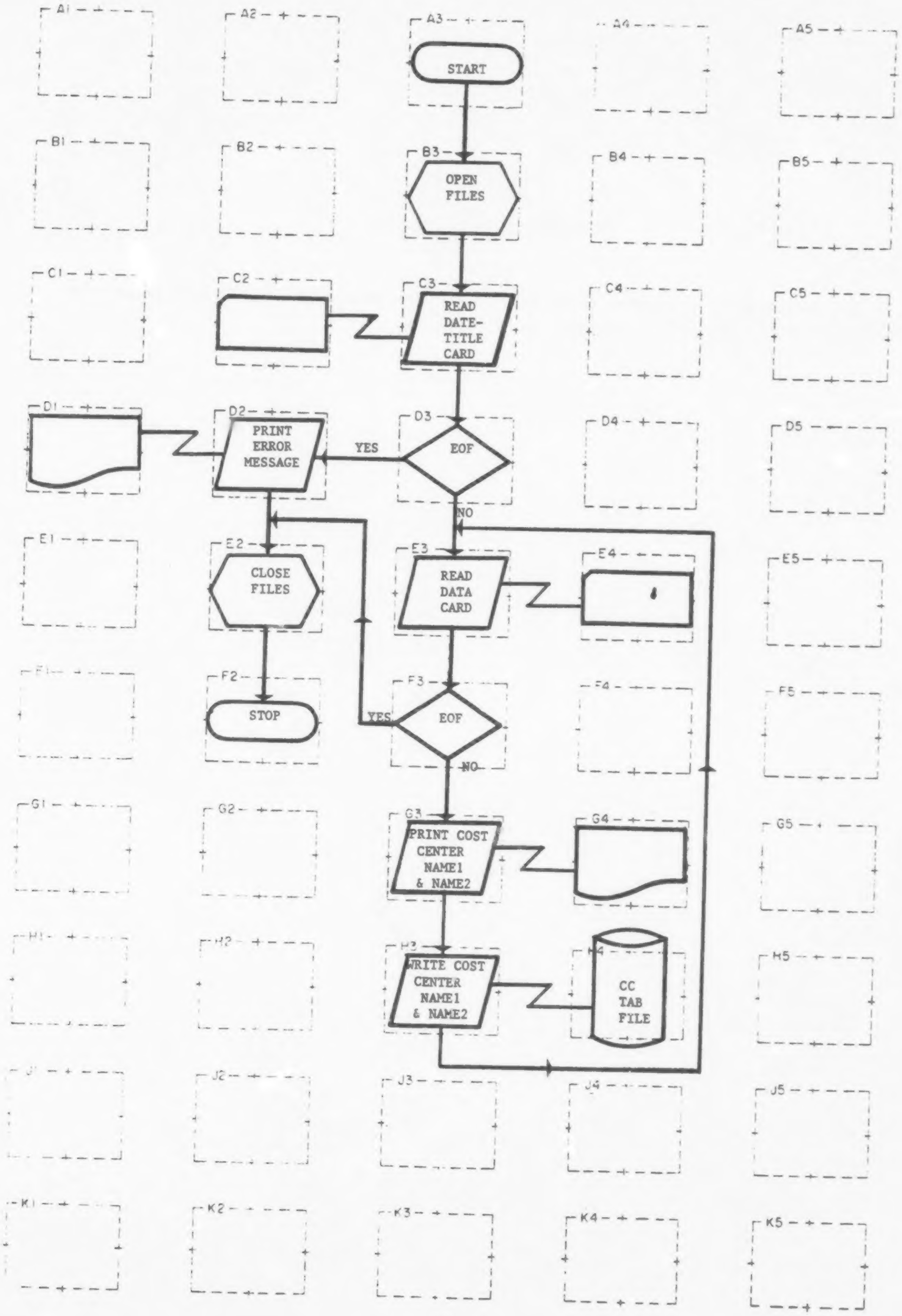
SOURCE 26

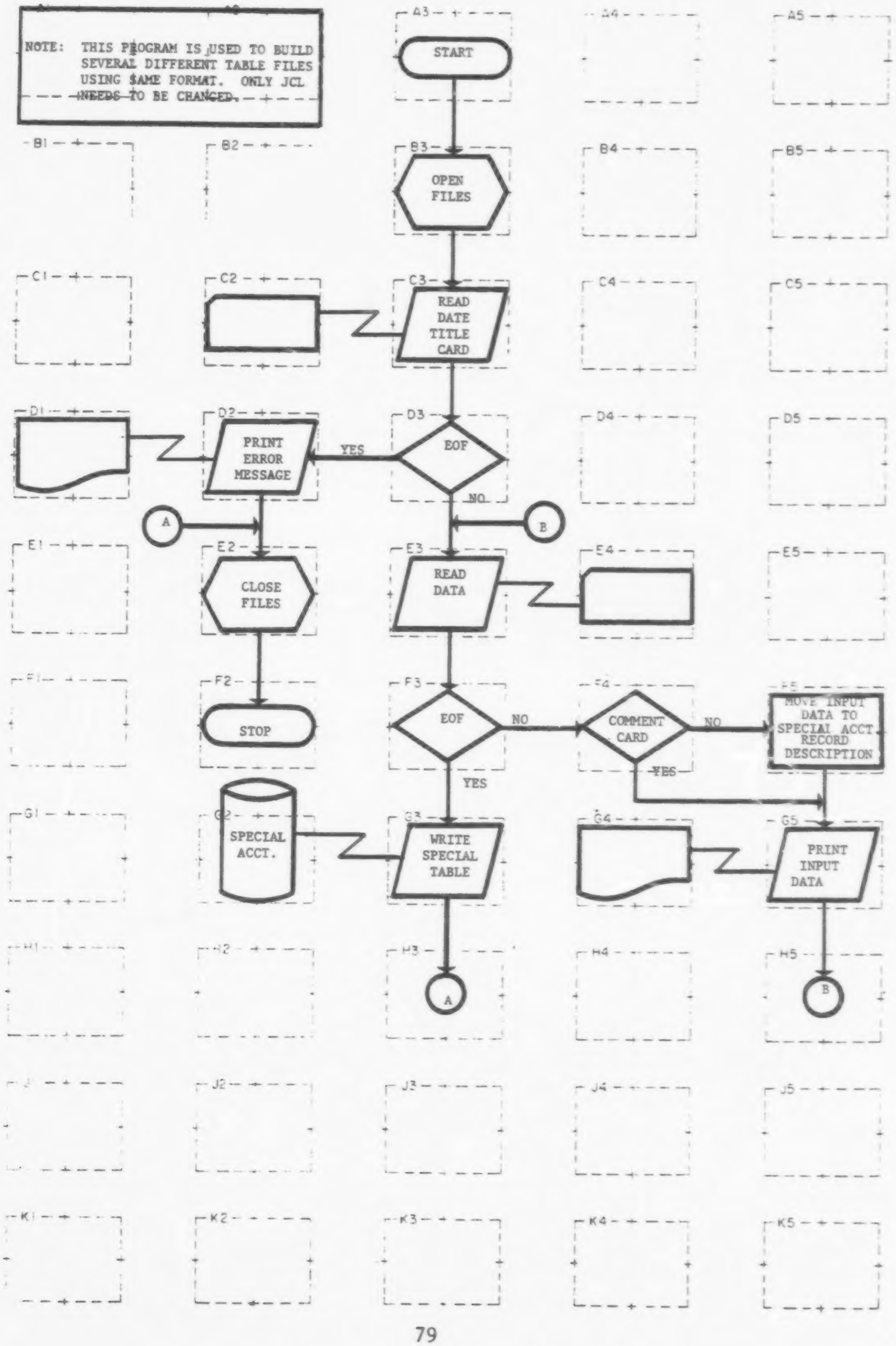
FIELD NO.	FIELD NAME	COLUMNS FROM	COLUMNS THRU	NO. OF COLUMNS	TYPE N	TYPE A	JUS.	VER.	REMARKS AND INSTRUCTIONS
1	ACCOUNT NO.	1	10	10	X	X			
2	COST CENTER	11	14	4	X				
3	COST CATEGORY	15	16	2	X				
4	AMOUNT	17	26	10	X				

SECTION 4

PROGRAM FLOW DIAGRAMS

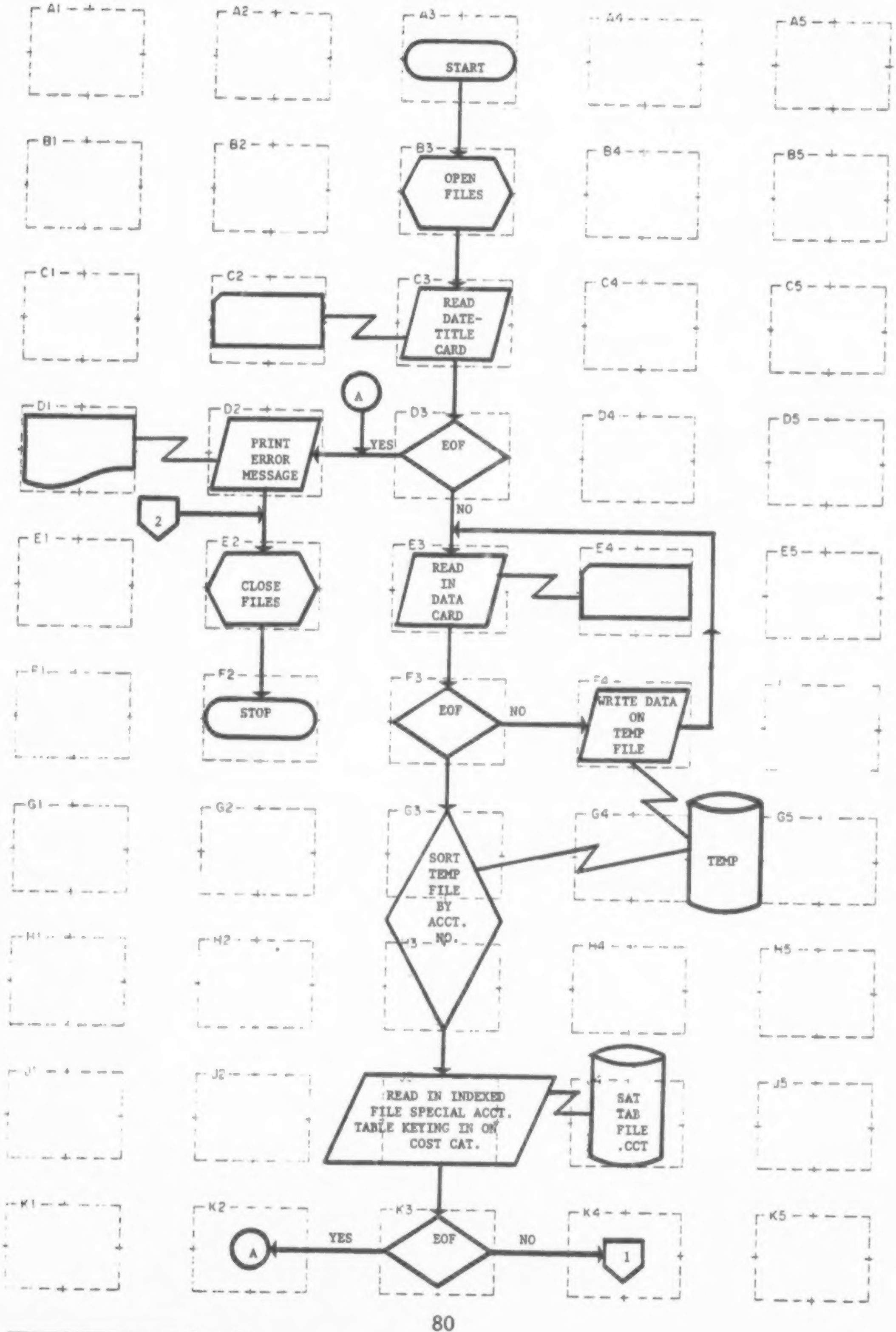
The following program flow diagrams are provided to illustrate the normal activity sequence within each program.


A1
A2
A3
A4
A5
START
B1
B2
B3
B4
B5
OPEN FILES
C1
C2
C3
C4
C5
READ DATE-TITLE CARD
D1
D2
D3
D4
D5
PRINT ERROR MESSAGE
YES
EOF
NO
E1
E2
E3
E4
E5
CLOSE FILES
READ DATA CARD
F1
F2
F3
F4
F5
STOP
YES
EOF
NO
G1
G2
G3
G4
G5
PRINT COST CENTER NAME1 & NAME2
H1
H2
H3
H4
H5
WRITE COST CENTER NAME1 & NAME2
CC TAB FILE
J1
J2
J3
J4
J5
K1
K2
K3
K4
K5



NOTE: THIS PROGRAM IS USED TO BUILD SEVERAL DIFFERENT TABLE FILES USING SAME FORMAT. ONLY JCL NEEDS TO BE CHANGED.

A3
START
A4
A5
B1
B2
B3
OPEN FILES
B4
B5
C1
C2
C3
READ DATE TITLE CARD
C4
C5
D1
D2
PRINT ERROR MESSAGE
YES
D3
EOF
NO
D4
D5
A
B
E1
E2
CLOSE FILES
E3
READ DATA
E4
E5
F1
F2
STOP
F3
EOF
NO
F4
COMMENT CARD
NO
F5
MOVE INPUT DATA TO SPECIAL ACCT. RECORD DESCRIPTION
YES
YES
G1
G2
SPECIAL ACCT.
G3
WRITE SPECIAL TABLE
G4
G5
PRINT INPUT DATA
H1
H2
H3
A
H4
H5
B
J1
J2
J3
J4
J5
K1
K2
K3
K4
K5


A1
A2
A3
START
A4
A5
B1
B2
B3
OPEN FILES
B4
B5
C1
C2
C3
READ DATE-TITLE CARD
C4
C5
A
D1
D2
PRINT ERROR MESSAGE
YES
D3
EOF
D4
D5
2
NO
E1
E2
CLOSE FILES
E3
READ IN DATA CARD
E4
E5
F1
F2
STOP
F3
EOF
NO
F4
WRITE DATA ON TEMP FILE
G1
G2
G3
SORT TEMP FILE BY ACCT. NO.
G4
TEMP
G5
H1
H2
H3
H4
H5
J1
J2
READ IN INDEXED FILE SPECIAL ACCT. TABLE KEYING IN ON COST CAT.
SAT TAB FILE .CCT
J5
K1
K2
A
YES
K3
EOF
NO
K4
1
K5

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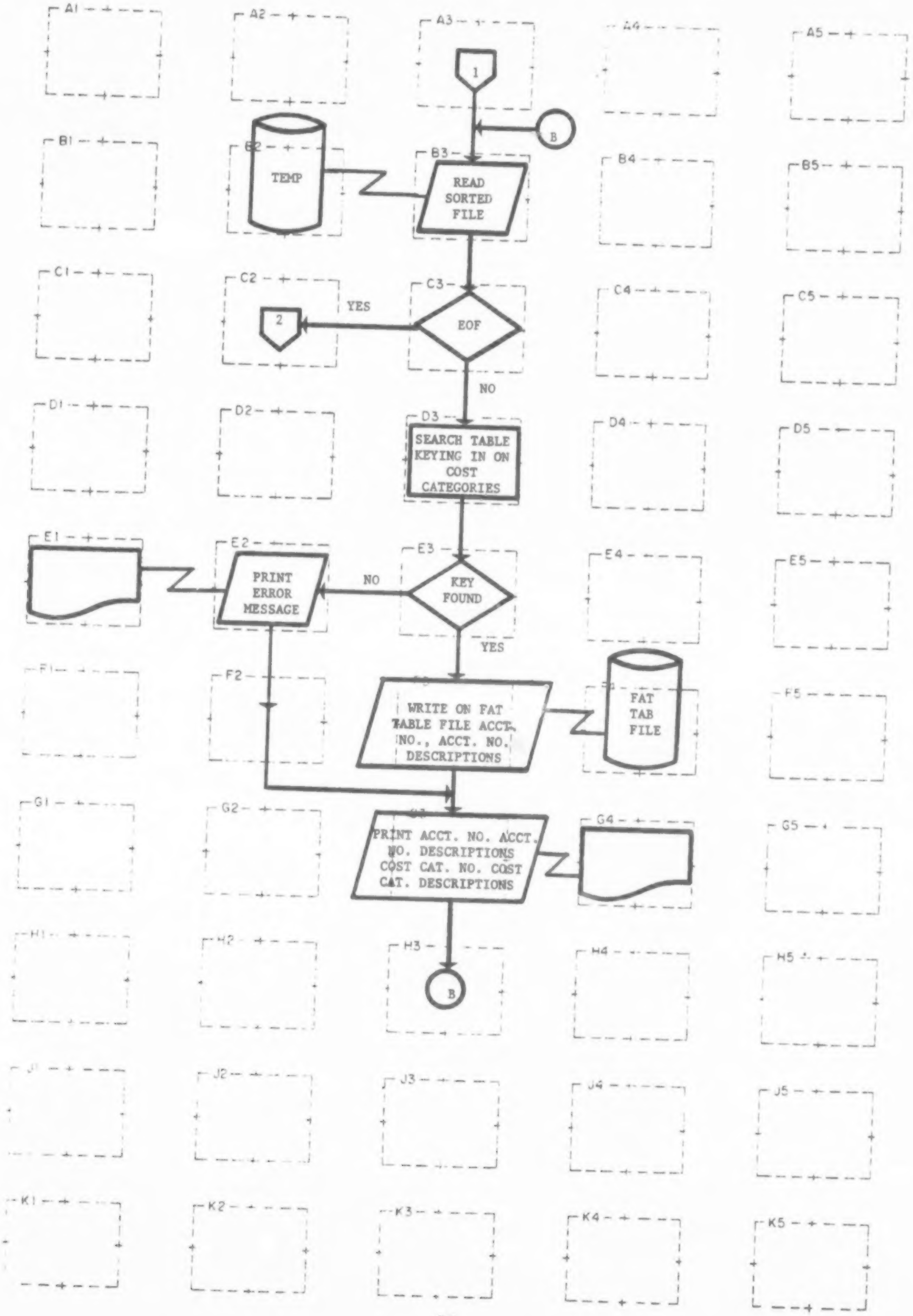
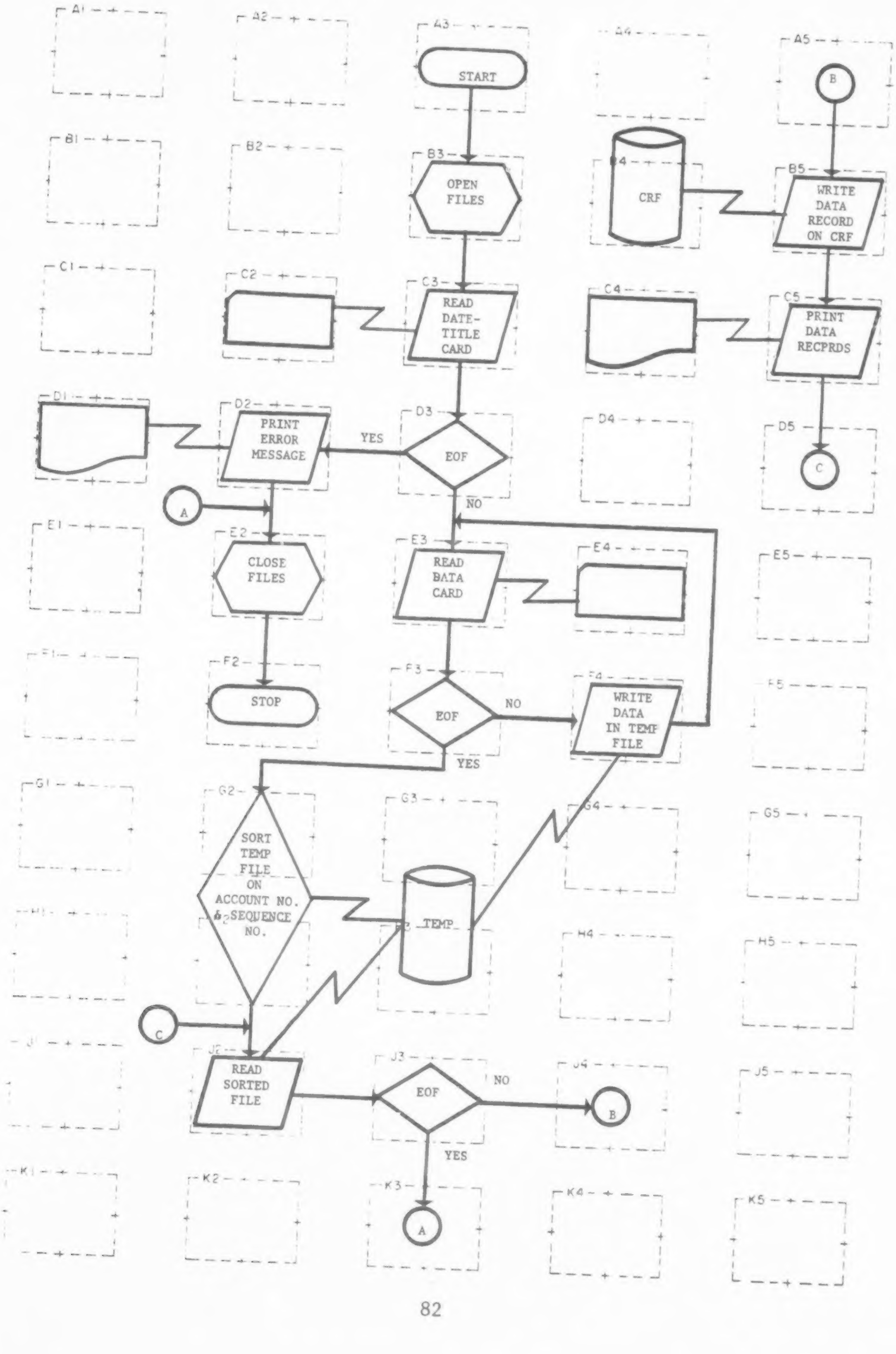
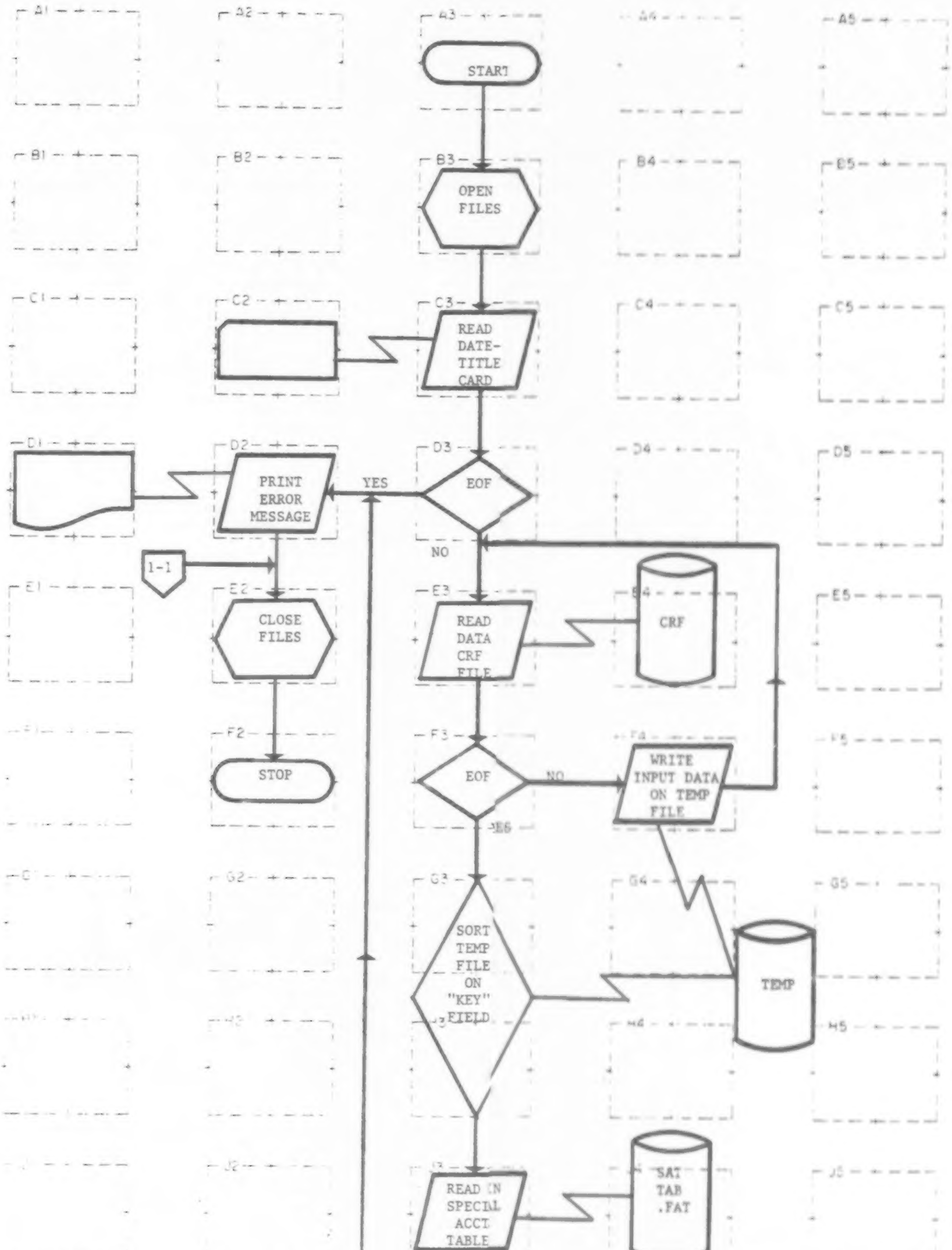

1
B
TEMP
READ SORTED FILE
EOF
YES
2
NO
SEARCH TABLE KEYING IN ON COST CATEGORIES
KEY FOUND
NO
PRINT ERROR MESSAGE
YES
WRITE ON FAT TABLE FILE ACCT. NO., ACCT. NO. DESCRIPTIONS
FAT TAB FILE
PRINT ACCT. NO. ACCT. NO. DESCRIPTIONS COST CAT. NO. COST CAT. DESCRIPTIONS
B


A1
A2
A3
START
A4
A5
B
B1
B2
B3
OPEN FILES
B4
CRF
B5
WRITE DATA RECORD ON CRF
C1
C2
C3
READ DATE-TITLE CARD
C4
C5
PRINT DATA RECPRDS
D1
D2
PRINT ERROR MESSAGE
YES
D3
EOF
NO
D4
D5
C
A
E1
E2
CLOSE FILES
E3
READ BATA CARD
E4
E5
F1
F2
STOP
F3
EOF
NO
F4
WRITE DATA IN TEMP FILE
F5
YES
G1
G2
SORT TEMP FILE ON ACCOUNT NO. & SEQUENCE NO.
G3
G4
G5
H1
TEMP
H4
H5
C
J1
J2
READ SORTED FILE
J3
EOF
NO
J4
B
J5
YES
K1
K2
K3
A
K4
K5


START
OPEN FILES
READ DATE-TITLE CARD
EOF
YES
PRINT ERROR MESSAGE
NO
1-1
CLOSE FILES
STOP
READ DATA CRF FILE
CRF
EOF
NO
WRITE INPUT DATA ON TEMP FILE
YES
SORT TEMP FILE ON "KEY" FIELD
TEMP
READ IN SPECIAL ACCT TABLE
SAT TAB .FAT
YES
EOF
NO
2-1

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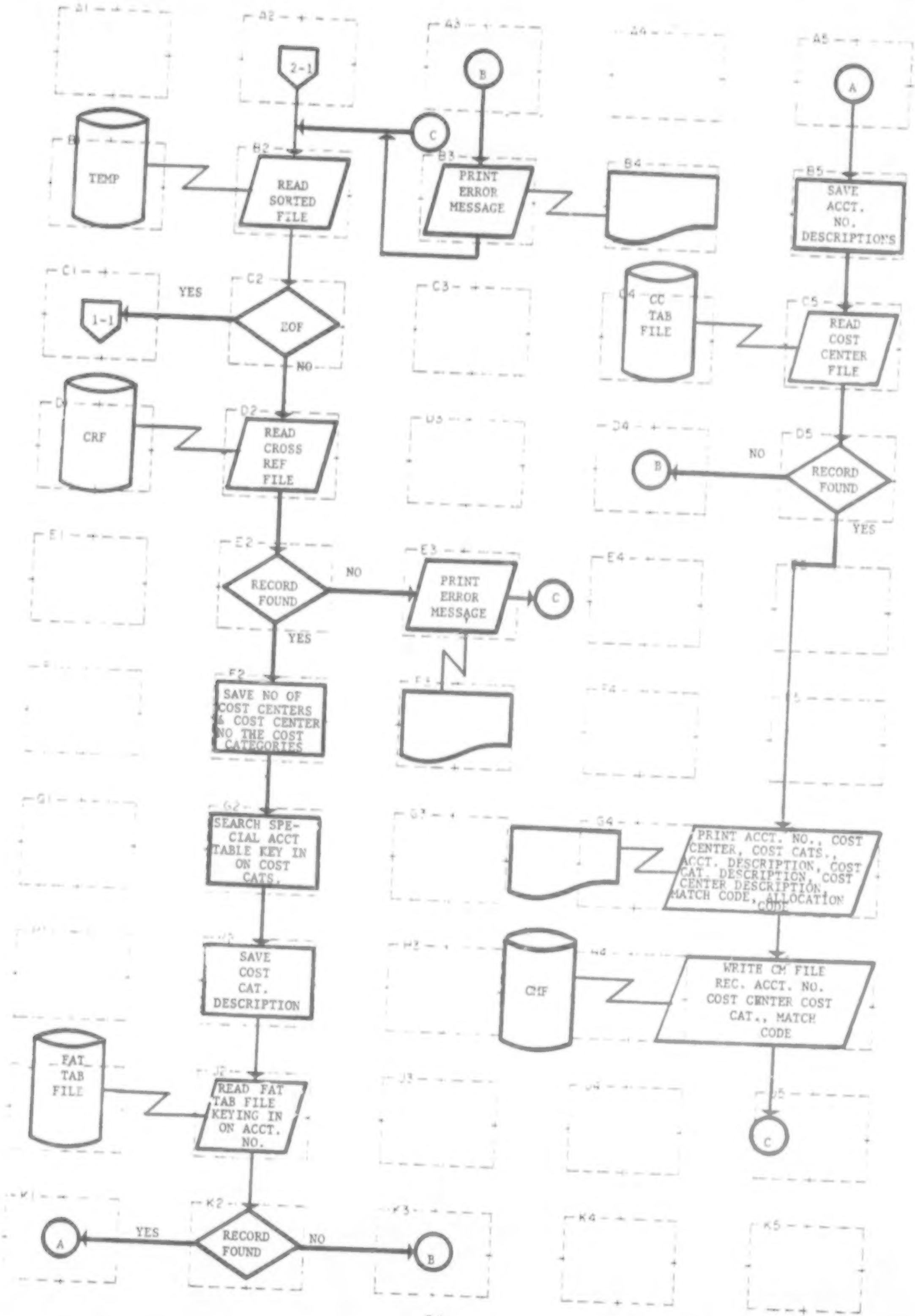
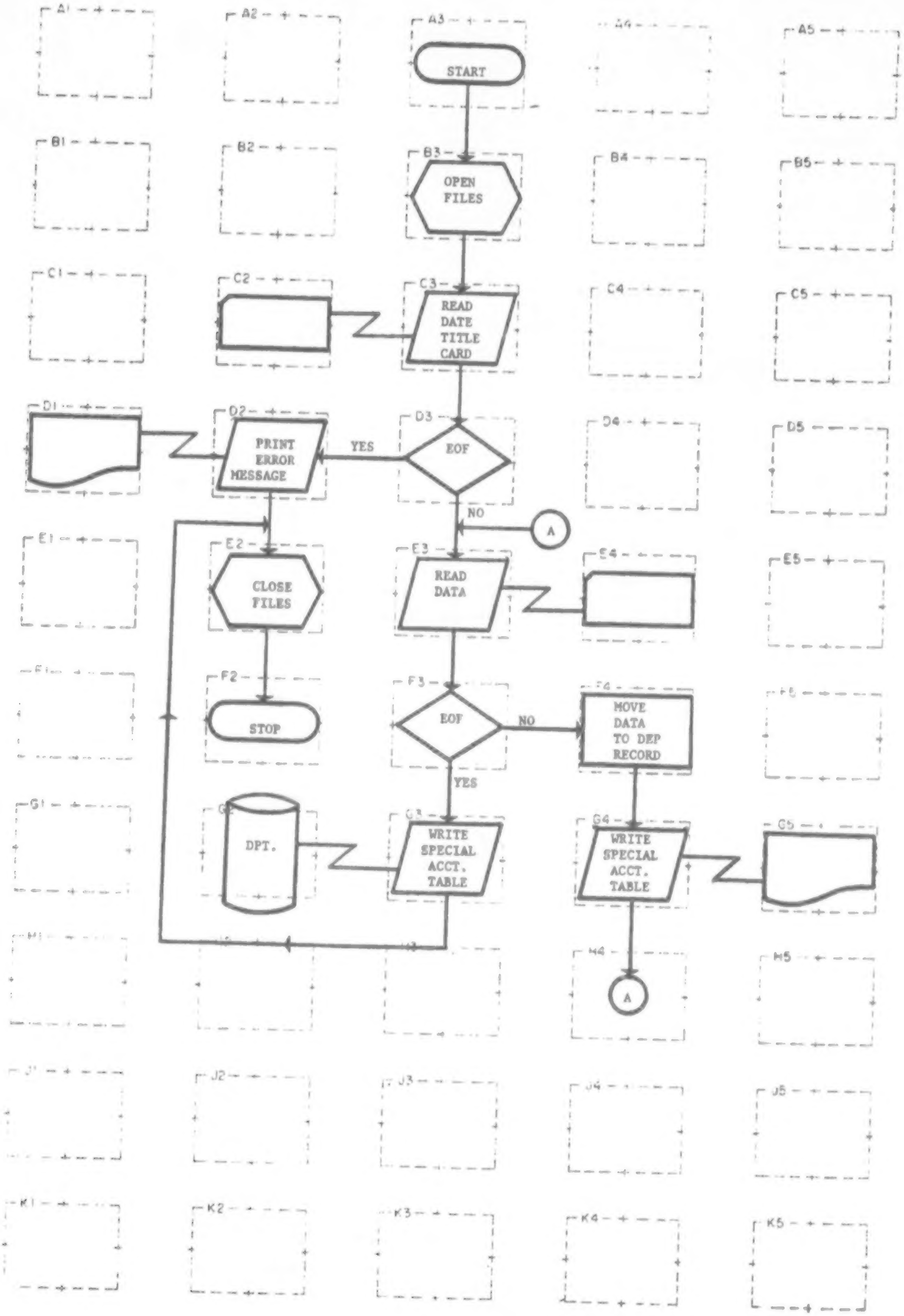
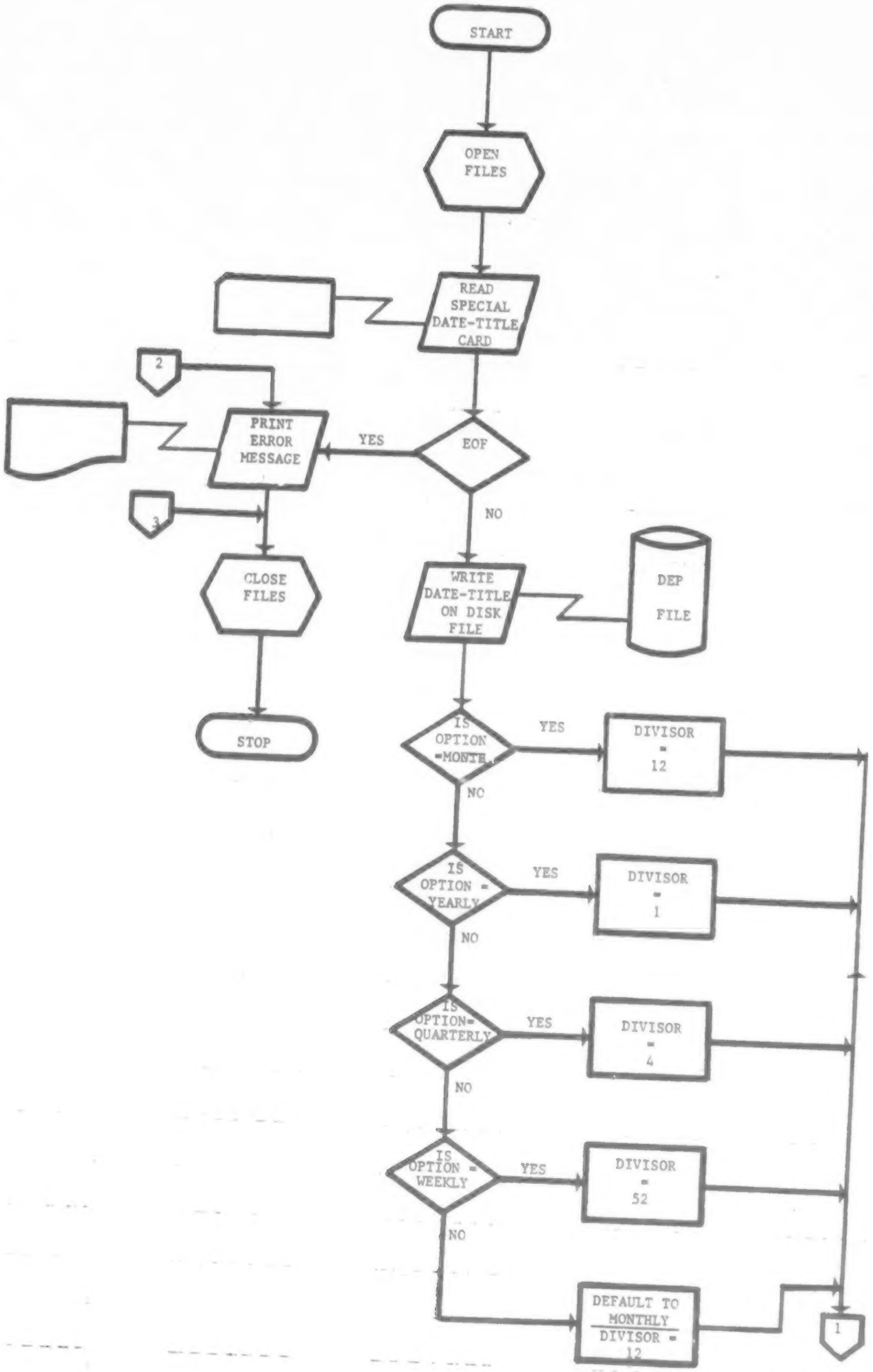
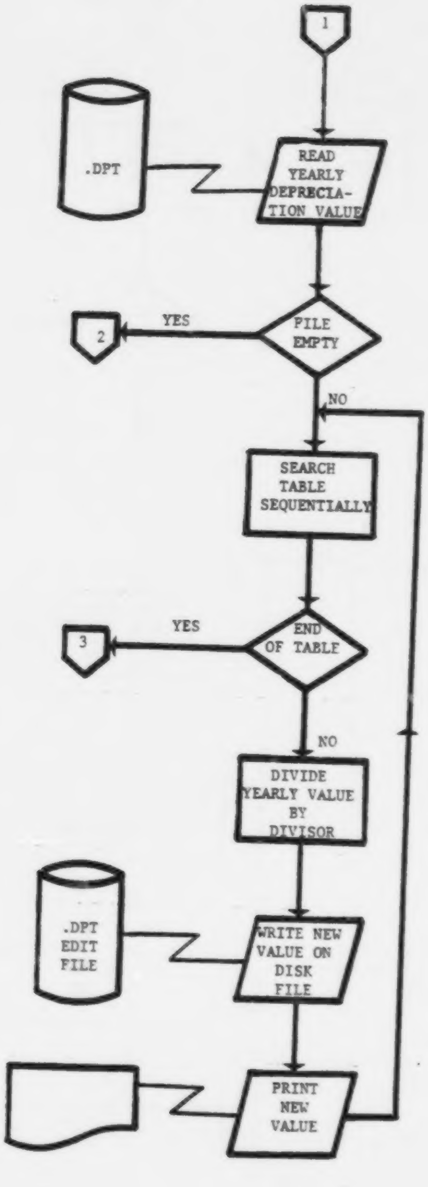
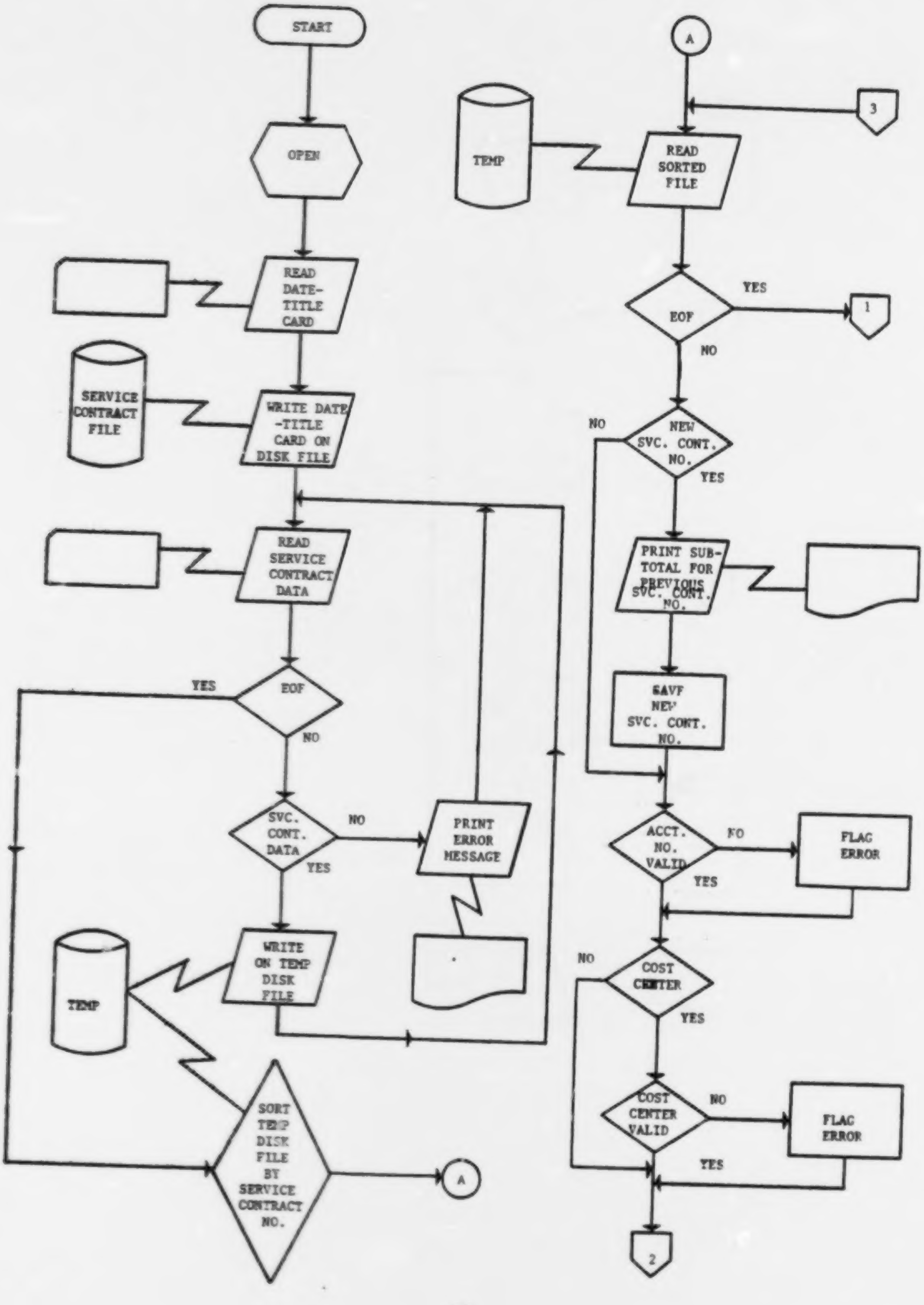
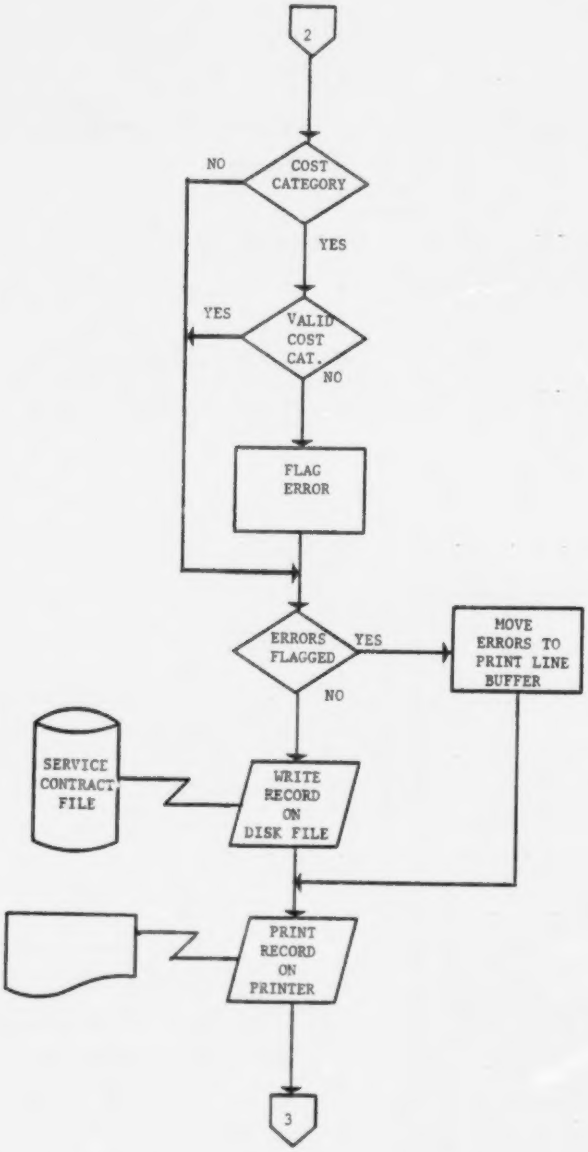

A1
A2
2-1
A3
B
A4
A5
A
C
TEMP
B2
READ SORTED FILE
B3
PRINT ERROR MESSAGE
B4
B5
SAVE ACCT. NO. DESCRIPTIONS
C1
C2
YES
1-1
EOF
NO
C3
CC TAB FILE
C5
READ COST CENTER FILE
CRF
D2
READ CROSS REF FILE
D3
D4
D5
NO
B
RECORD FOUND
YES
E1
E2
RECORD FOUND
NO
E3
PRINT ERROR MESSAGE
C
E4
YES
F2
SAVE NO OF COST CENTERS & COST CENTER NO THE COST CATEGORIES
F3
F4
G1
G2
SEARCH SPECIAL ACCT TABLE KEY IN ON COST CATS.
G3
G4
PRINT ACCT. NO., COST CENTER, COST CATS., ACCT. DESCRIPTION, COST CAT. DESCRIPTION, COST CENTER DESCRIPTION, MATCH CODE, ALLOCATION CODE
H2
SAVE COST CAT. DESCRIPTION
H3
CMF
H4
WRITE CM FILE REC. ACCT. NO. COST CENTER COST CAT., MATCH CODE
FAT TAB FILE
J2
READ FAT TAB FILE KEYING IN ON ACCT. NO.
J3
J4
J5
C
K1
A
YES
K2
RECORD FOUND
NO
K3
B
K4
K5

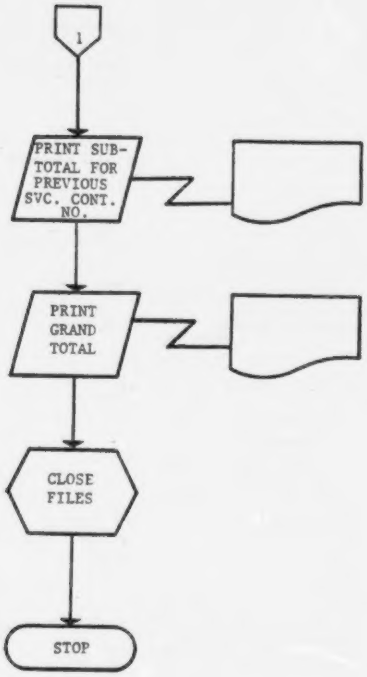

START
OPEN FILES
READ DATE TITLE CARD
EOF
YES
NO
PRINT ERROR MESSAGE
A
CLOSE FILES
READ DATA
STOP
EOF
NO
YES
MOVE DATA TO DEP RECORD
DPT.
WRITE SPECIAL ACCT. TABLE
WRITE SPECIAL ACCT. TABLE
A
A1
A2
A3
A4
A5
B1
B2
B3
B4
B5
C1
C2
C3
C4
C5
D1
D2
D3
D4
D5
E1
E2
E3
E4
E5
F1
F2
F3
F4
F5
G1
G2
G3
G4
G5
H1
H2
H3
H4
H5
J1
J2
J3
J4
J5
K1
K2
K3
K4
K5

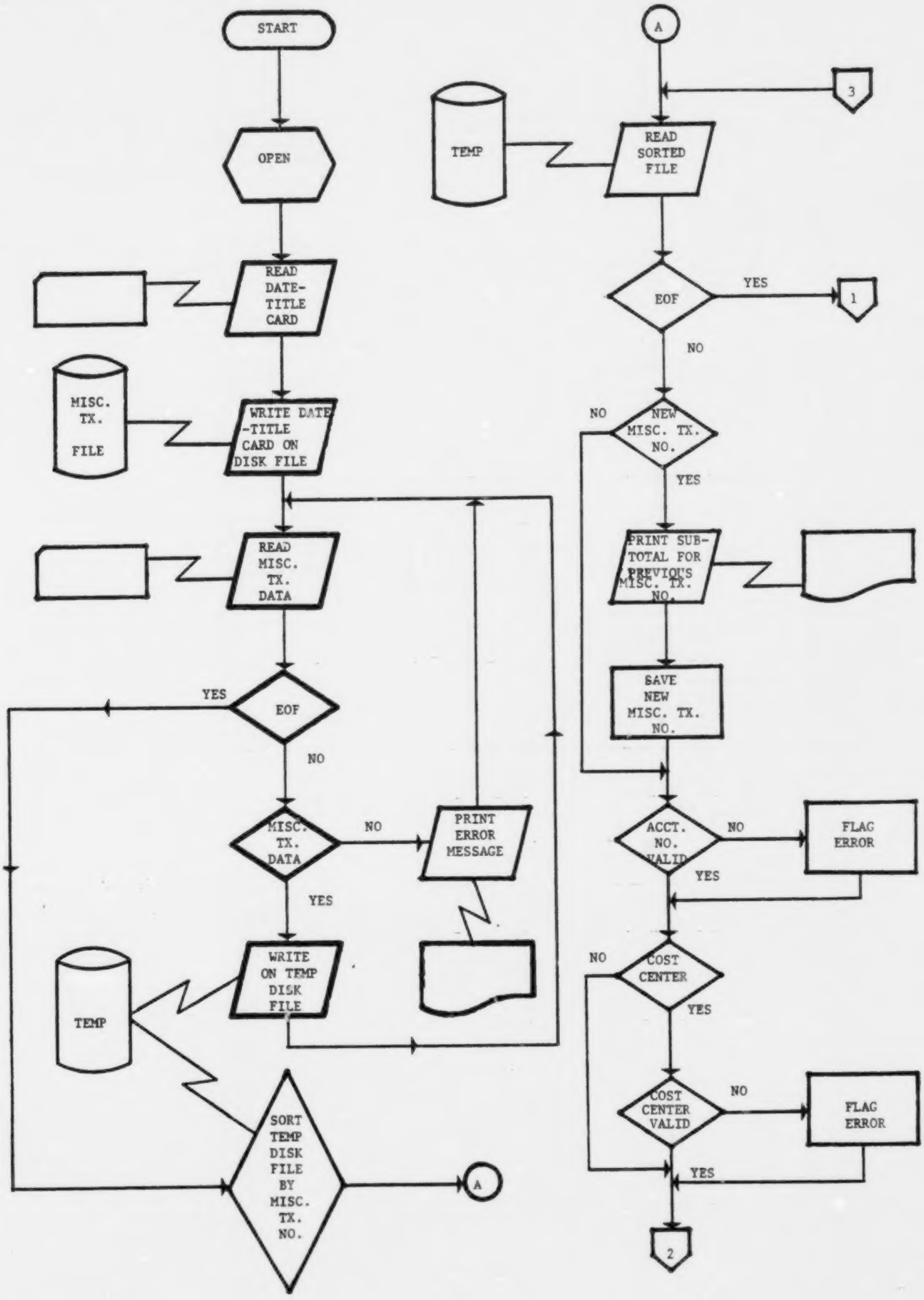

START
OPEN FILES
READ SPECIAL DATE-TITLE CARD
2
PRINT ERROR MESSAGE
YES
EOF
NO
3
CLOSE FILES
STOP
WRITE DATE-TITLE ON DISK FILE
DEP FILE
IS OPTION =MONTH
YES
DIVISOR = 12
NO
IS OPTION = YEARLY
YES
DIVISOR = 1
NO
IS OPTION= QUARTERLY
YES
DIVISOR = 4
NO
IS OPTION = WEEKLY
YES
DIVISOR = 52
NO
DEFAULT TO MONTHLY
DIVISOR = 12
1

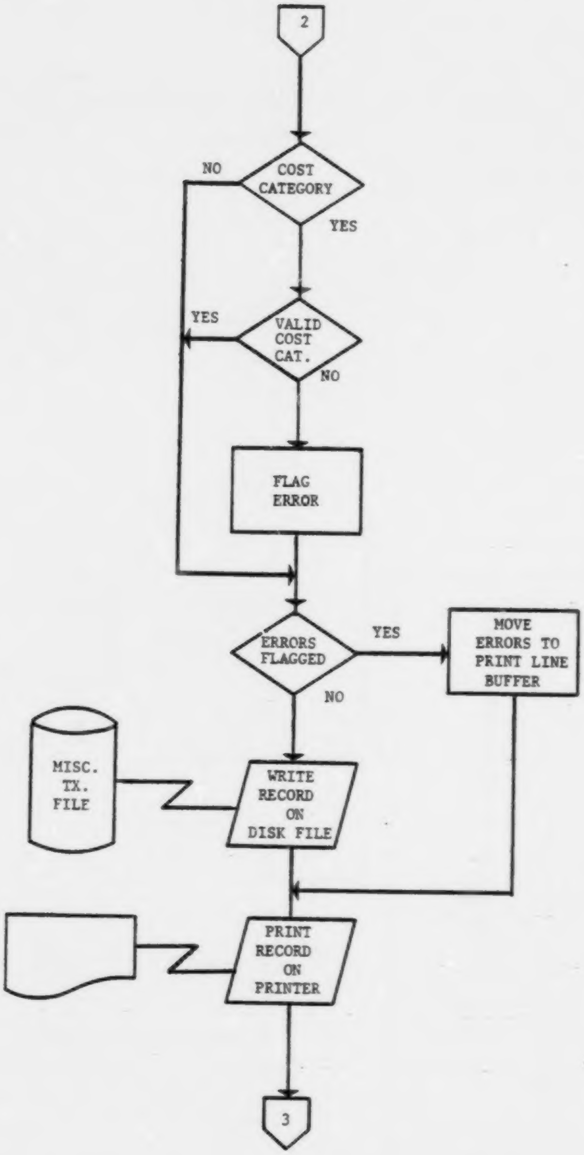

1
.DPT
READ YEARLY DEPRECIATION VALUE
FILE EMPTY
YES
2
NO
SEARCH TABLE SEQUENTIALLY
END OF TABLE
YES
3
NO
DIVIDE YEARLY VALUE BY DIVISOR
.DPT EDIT FILE
WRITE NEW VALUE ON DISK FILE
PRINT NEW VALUE

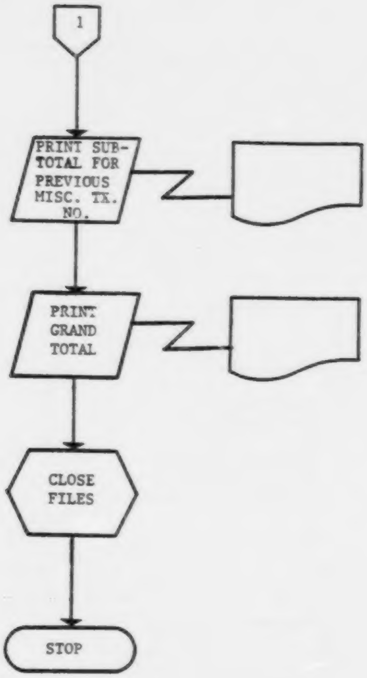

START
OPEN
READ DATE-TITLE CARD
SERVICE CONTRACT FILE
WRITE DATE-TITLE CARD ON DISK FILE
READ SERVICE CONTRACT DATA
YES
EOF
NO
SVC. CONT. DATA
NO
YES
PRINT ERROR MESSAGE
WRITE ON TEMP DISK FILE
TEMP
SORT TEMP DISK FILE BY SERVICE CONTRACT NO.
A
A
3
TEMP
READ SORTED FILE
EOF
YES
1
NO
NO
NEW SVC. CONT. NO.
YES
PRINT SUB-TOTAL FOR PREVIOUS SVC. CONT. NO.
SAVE NEW SVC. CONT. NO.
ACCT. NO. VALID
NO
YES
FLAG ERROR
NO
COST CENTER
YES
COST CENTER VALID
NO
FLAG ERROR
YES
2

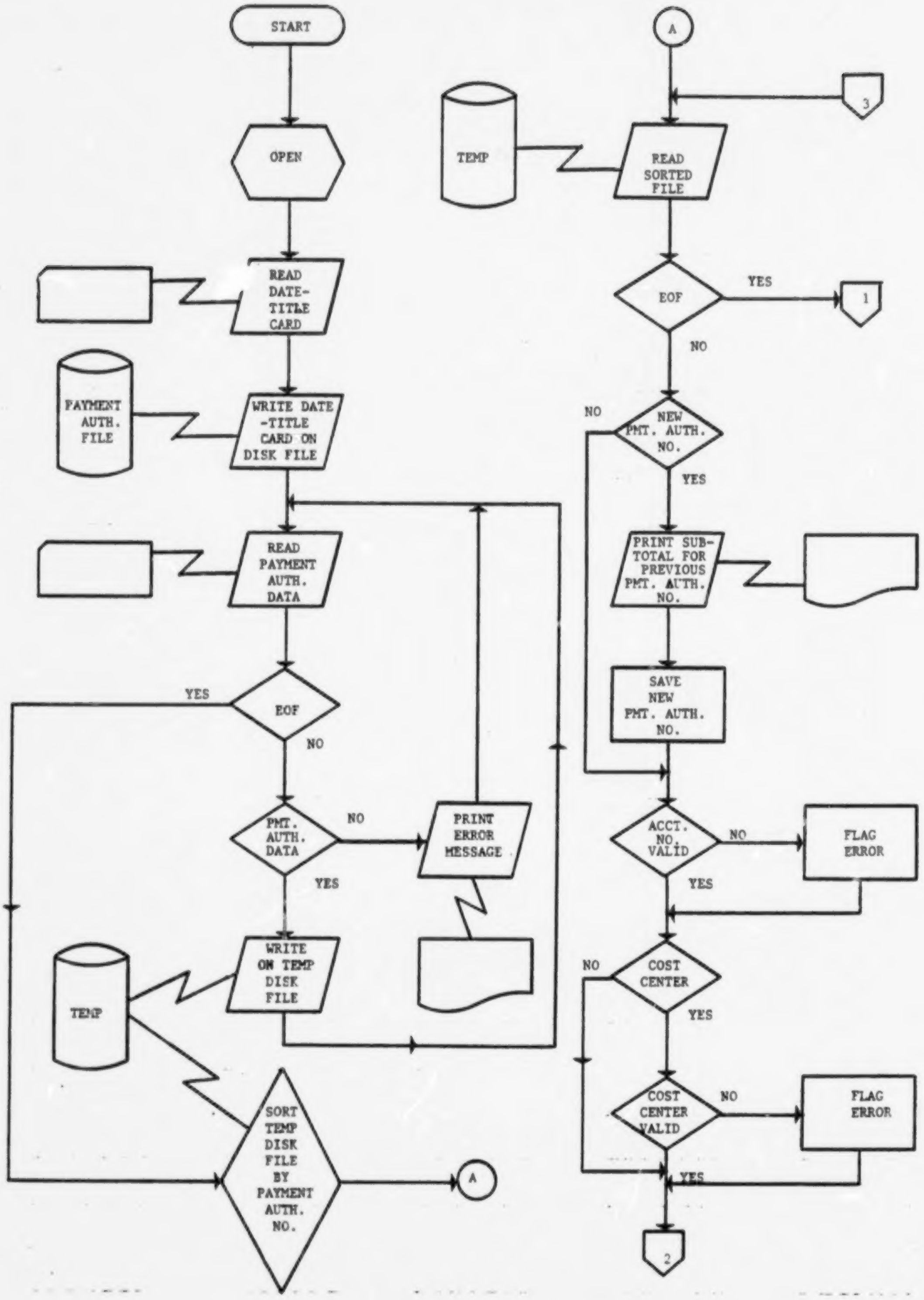

2
COST CATEGORY
NO
YES
VALID COST CAT.
YES
NO
FLAG ERROR
ERRORS FLAGGED
YES
NO
MOVE ERRORS TO PRINT LINE BUFFER
SERVICE CONTRACT FILE
WRITE RECORD ON DISK FILE
PRINT RECORD ON PRINTER
3

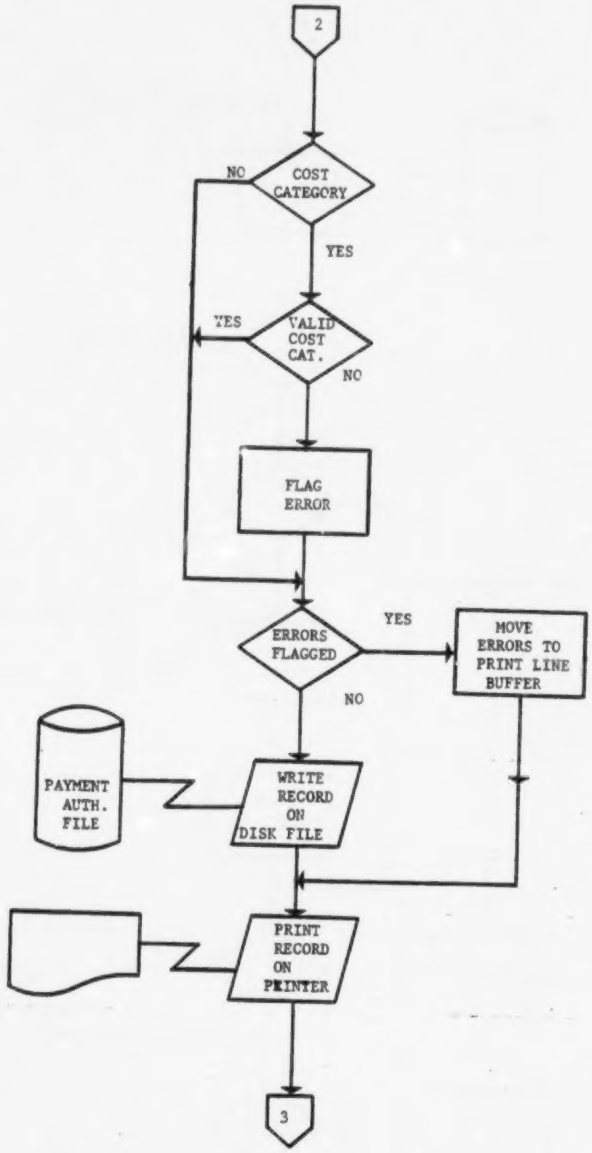

1
PRINT SUB-TOTAL FOR PREVIOUS SVC. CONT. NO.
PRINT GRAND TOTAL
CLOSE FILES
STOP

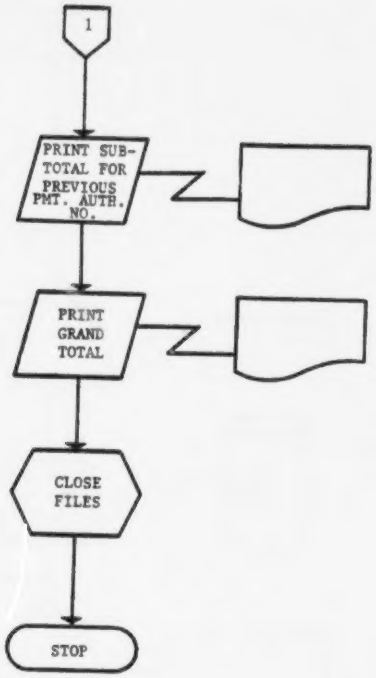

START
OPEN
READ DATE-TITLE CARD
MISC. TX. FILE
WRITE DATE-TITLE CARD ON DISK FILE
READ MISC. TX. DATA
EOF
YES
NO
MISC. TX. DATA
NO
YES
PRINT ERROR MESSAGE
WRITE ON TEMP DISK FILE
TEMP
SORT TEMP DISK FILE BY MISC. TX. NO.
A
A
3
TEMP
READ SORTED FILE
EOF
YES
1
NO
NEW MISC. TX. NO.
NO
YES
PRINT SUB-TOTAL FOR PREVIOUS MISC. TX. NO.
SAVE NEW MISC. TX. NO.
ACCT. NO. VALID
NO
FLAG ERROR
YES
COST CENTER
NO
YES
COST CENTER VALID
NO
FLAG ERROR
YES
2

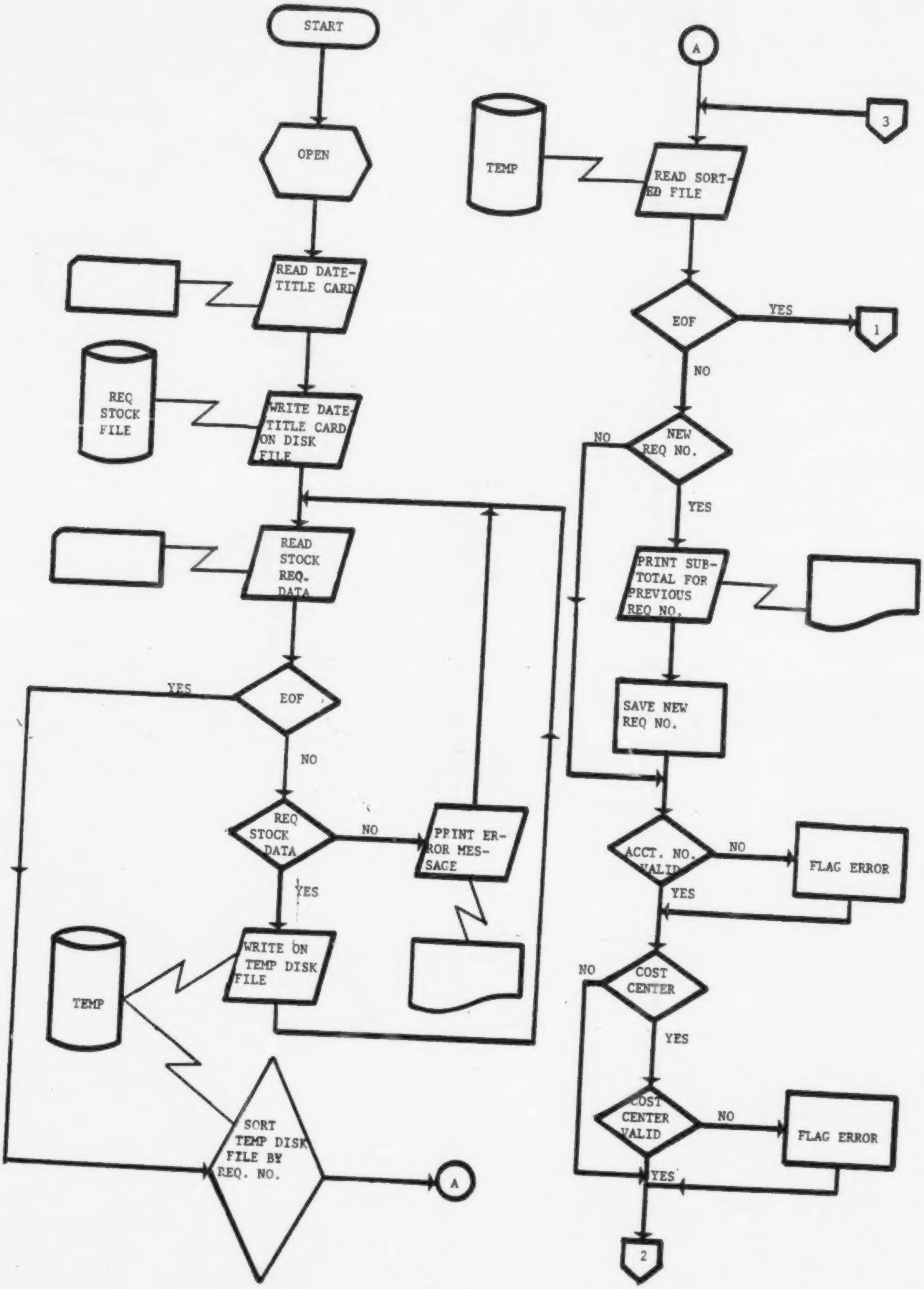

2
COST CATEGORY
NO
YES
VALID COST CAT.
YES
NO
FLAG ERROR
ERRORS FLAGGED
YES
NO
MOVE ERRORS TO PRINT LINE BUFFER
MISC. TX. FILE
WRITE RECORD ON DISK FILE
PRINT RECORD ON PRINTER
3

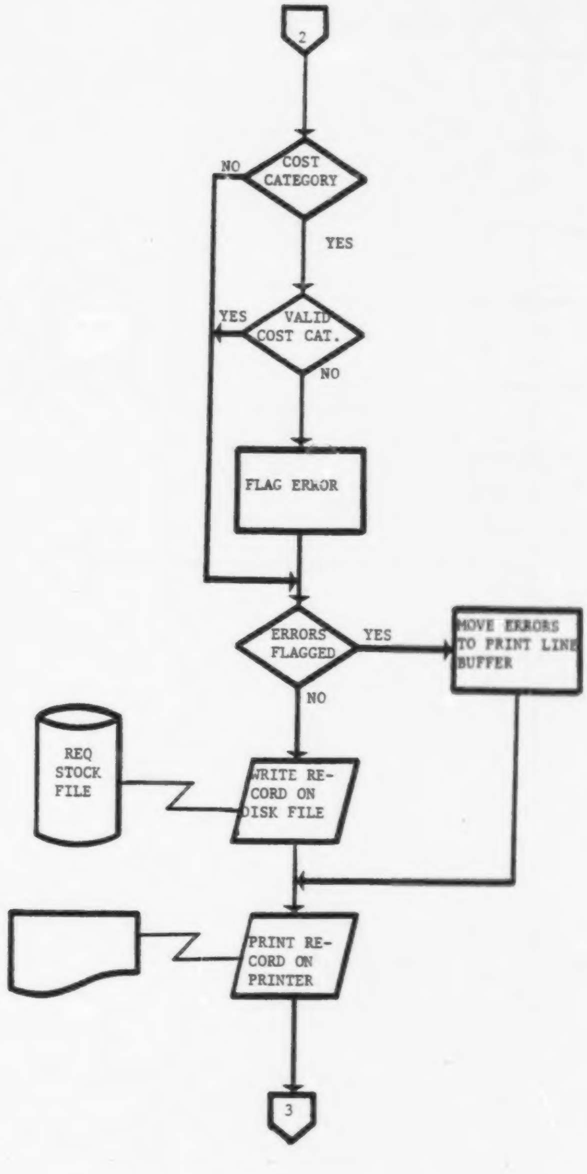

1
PRINT SUB-TOTAL FOR PREVIOUS MISC. TX. NO.
PRINT GRAND TOTAL
CLOSE FILES
STOP

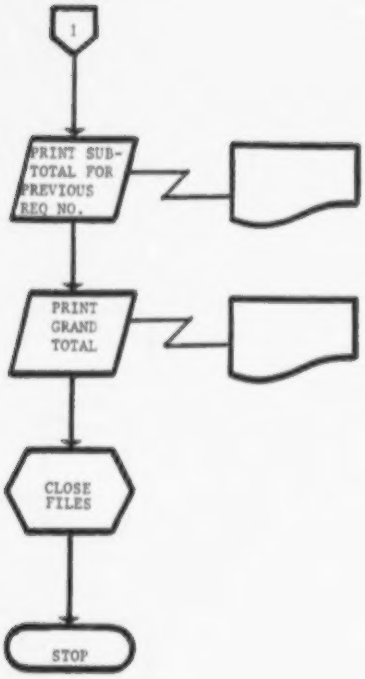

START
OPEN
READ DATE-TITLE CARD
PAYMENT AUTH. FILE
WRITE DATE -TITLE CARD ON DISK FILE
READ PAYMENT AUTH. DATA
YES
EOF
NO
PMT. AUTH. DATA
NO
PRINT ERROR MESSAGE
YES
TEMP
WRITE ON TEMP DISK FILE
SORT TEMP DISK FILE BY PAYMENT AUTH. NO.
A
A
3
TEMP
READ SORTED FILE
EOF
YES
1
NO
NO
NEW PMT. AUTH. NO.
YES
PRINT SUB-TOTAL FOR PREVIOUS PMT. AUTH. NO.
SAVE NEW PMT. AUTH. NO.
ACCT. NO. VALID
NO
FLAG ERROR
YES
NO
COST CENTER
YES
COST CENTER VALID
NO
FLAG ERROR
YES
2

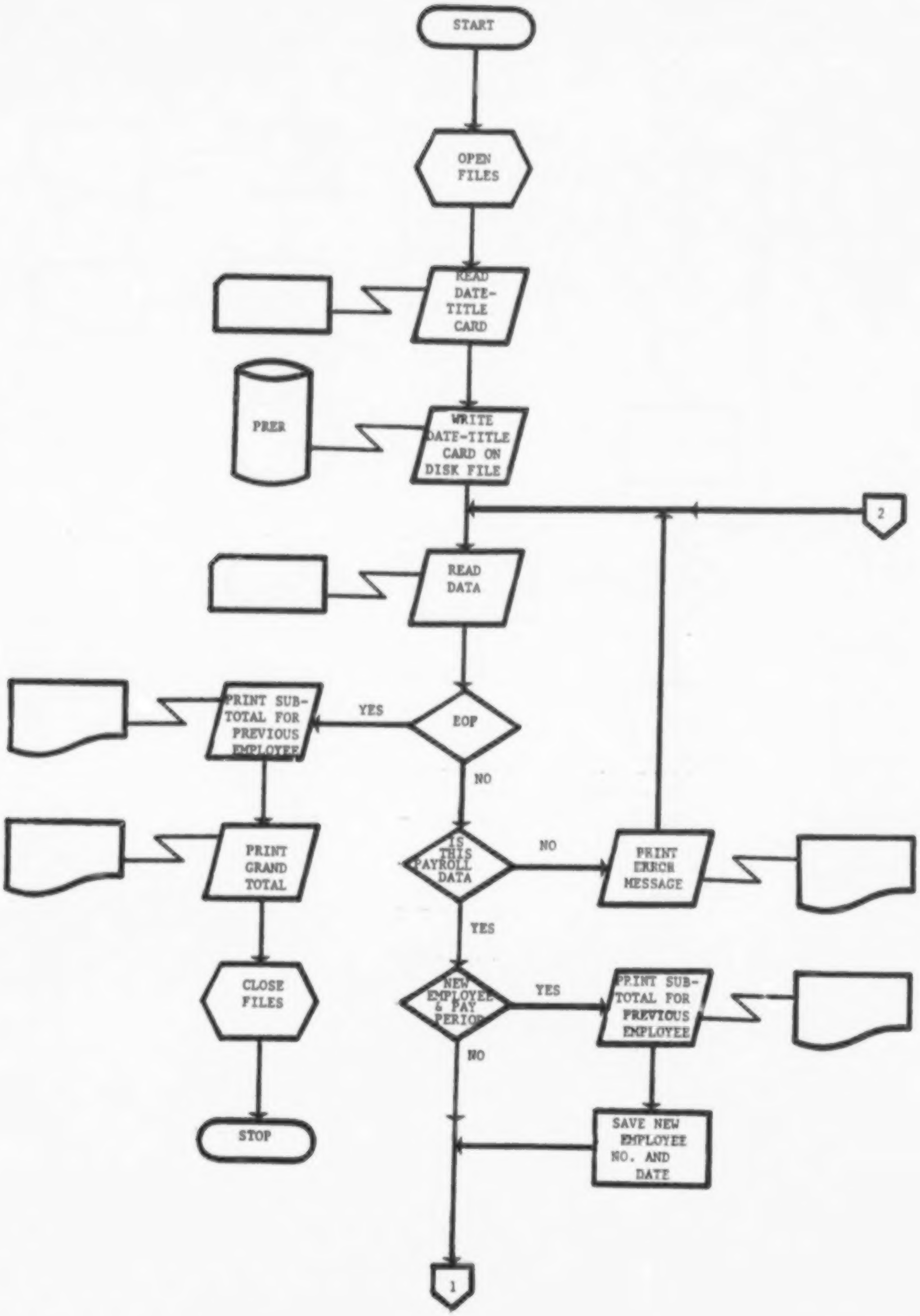

2
NO
COST CATEGORY
YES
YES
VALID COST CAT.
NO
FLAG ERROR
ERRORS FLAGGED
YES
MOVE ERRORS TO PRINT LINE BUFFER
NO
PAYMENT AUTH. FILE
WRITE RECORD ON DISK FILE
PRINT RECORD ON PRINTER
3

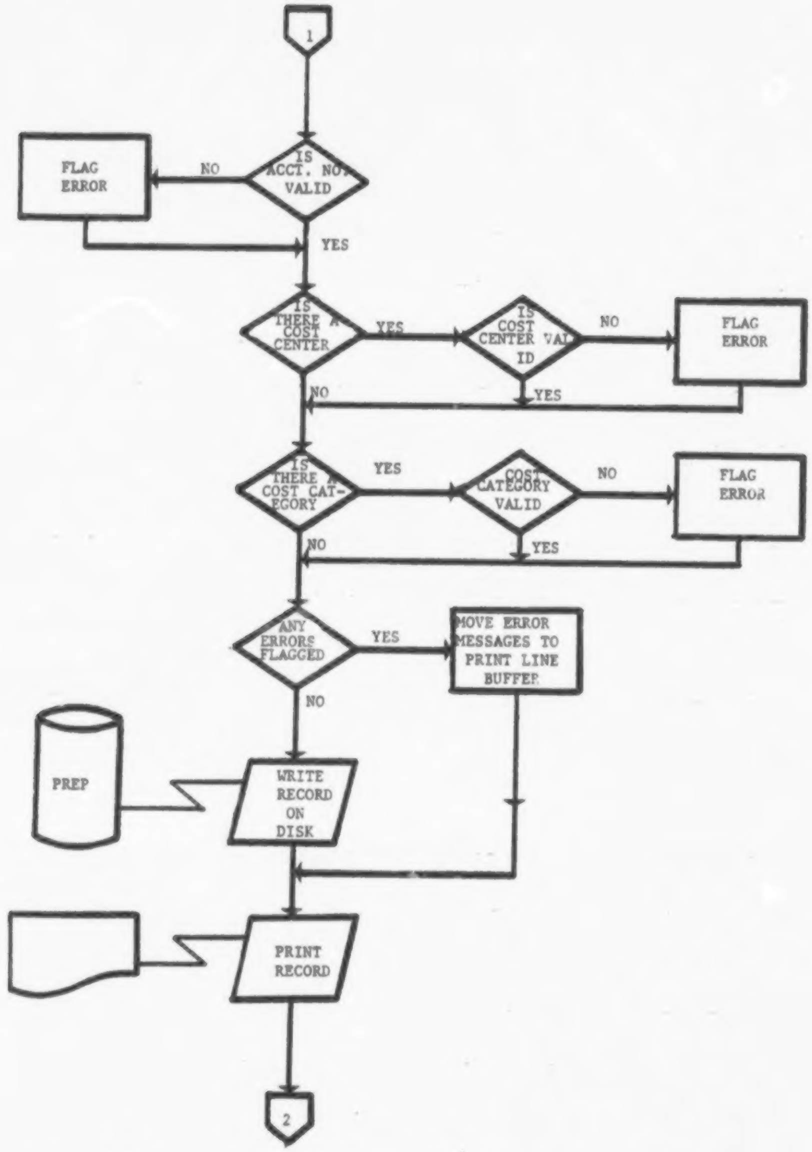

1
PRINT SUB-TOTAL FOR PREVIOUS PMT. AUTH. NO.
PRINT GRAND TOTAL
CLOSE FILES
STOP

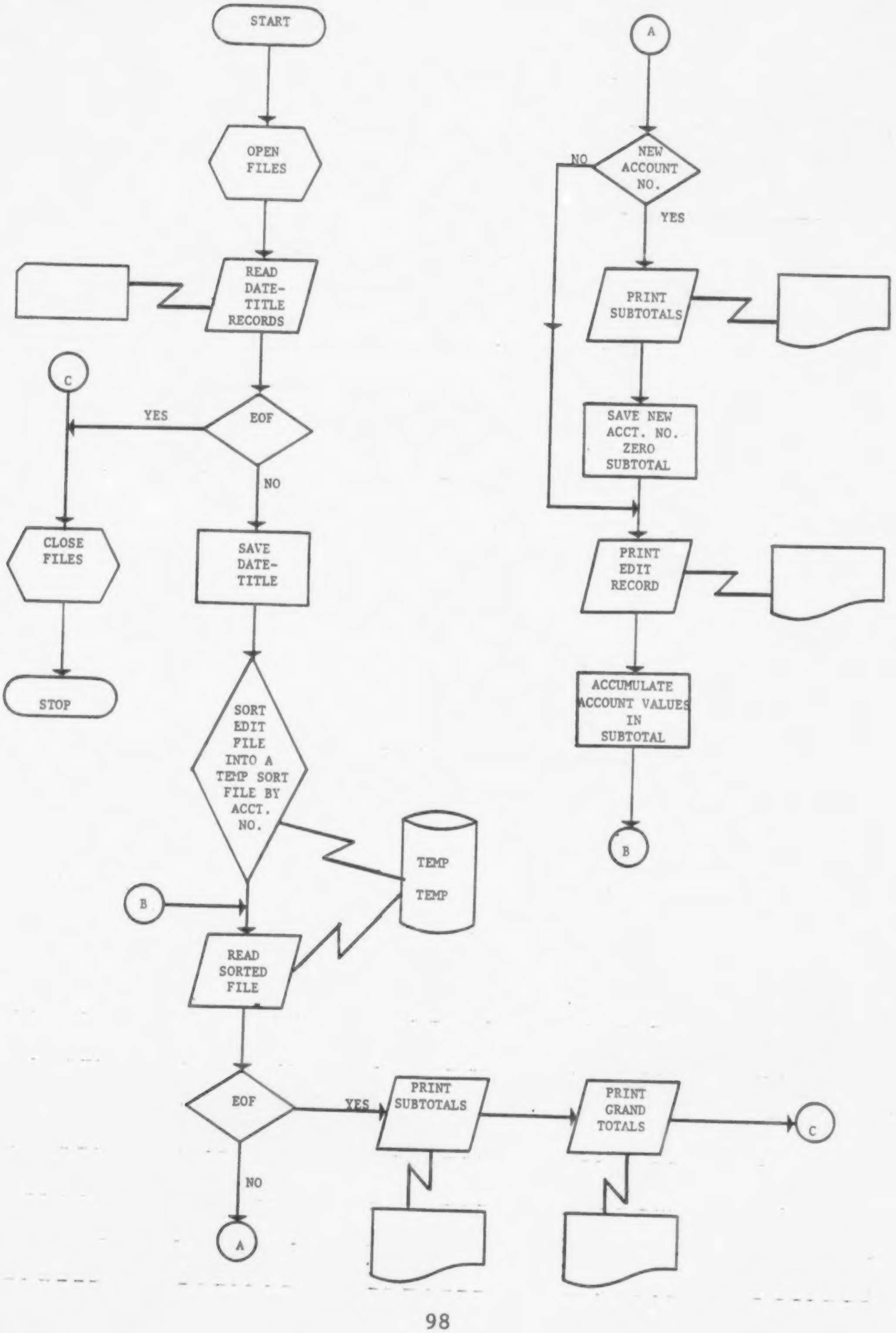

START
OPEN
READ DATE-TITLE CARD
REQ STOCK FILE
WRITE DATE-TITLE CARD ON DISK FILE
READ STOCK REQ. DATA
EOF
YES
NO
REQ STOCK DATA
NO
PRINT ERROR MESSAGE
YES
WRITE ON TEMP DISK FILE
TEMP
SORT TEMP DISK FILE BY REQ. NO.
A
A
3
TEMP
READ SORTED FILE
EOF
YES
1
NO
NEW REQ NO.
NO
YES
PRINT SUBTOTAL FOR PREVIOUS REQ NO.
SAVE NEW REQ NO.
ACCT. NO. VALID
NO
FLAG ERROR
YES
NO
COST CENTER
YES
COST CENTER VALID
NO
FLAG ERROR
YES
2

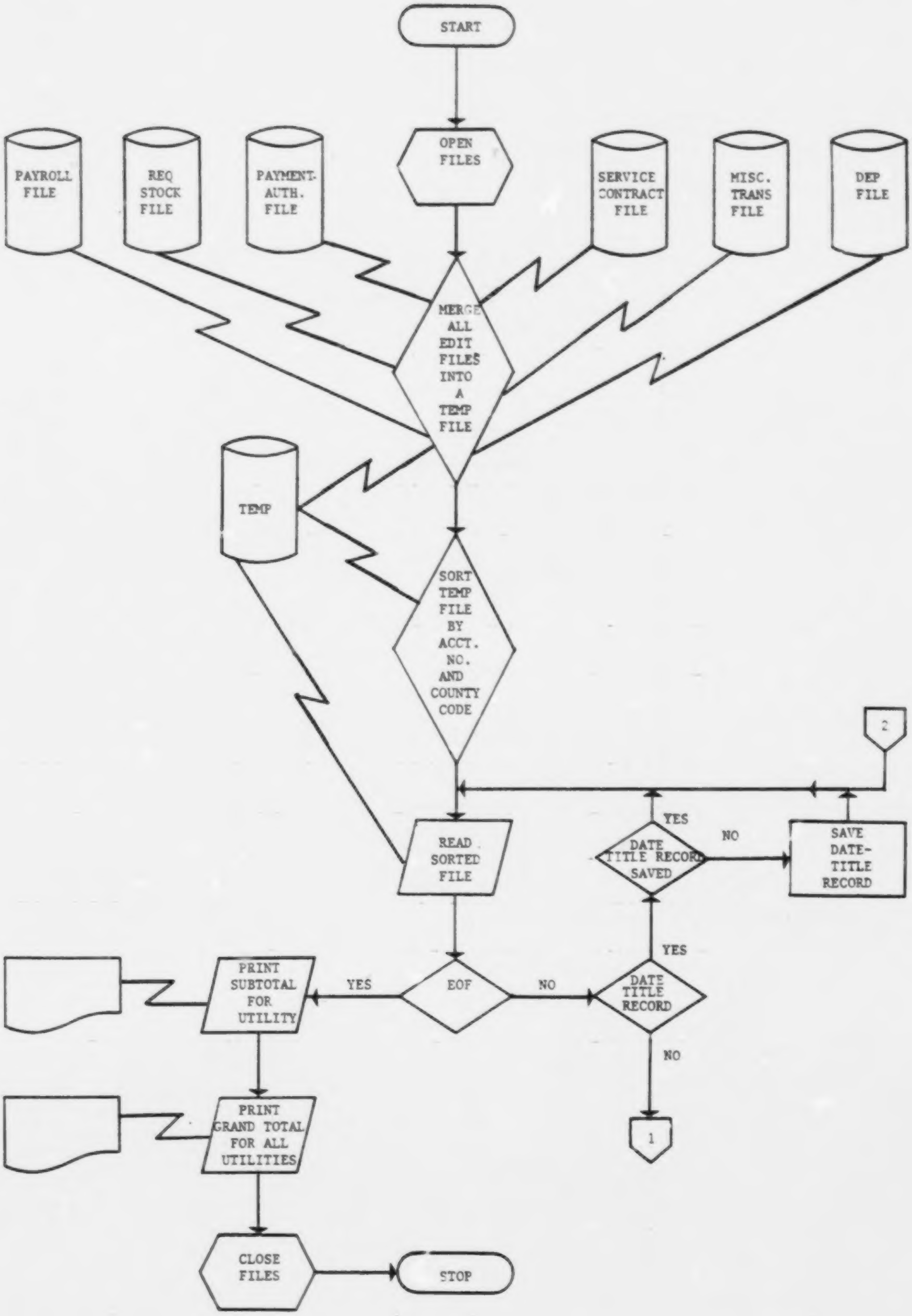

2
COST CATEGORY
NO
YES
VALID COST CAT.
YES
NO
FLAG ERROR
ERRORS FLAGGED
YES
NO
MOVE ERRORS TO PRINT LINE BUFFER
REQ STOCK FILE
WRITE RECORD ON DISK FILE
PRINT RECORD ON PRINTER
3

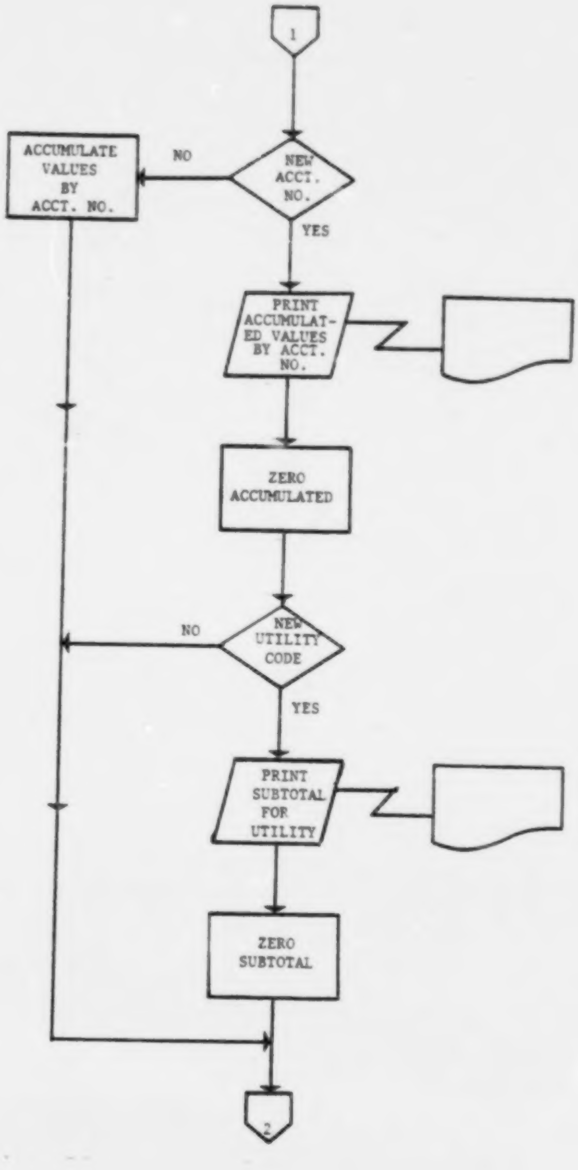

1
PRINT SUBTOTAL FOR PREVIOUS REQ NO.
PRINT GRAND TOTAL
CLOSE FILES
STOP

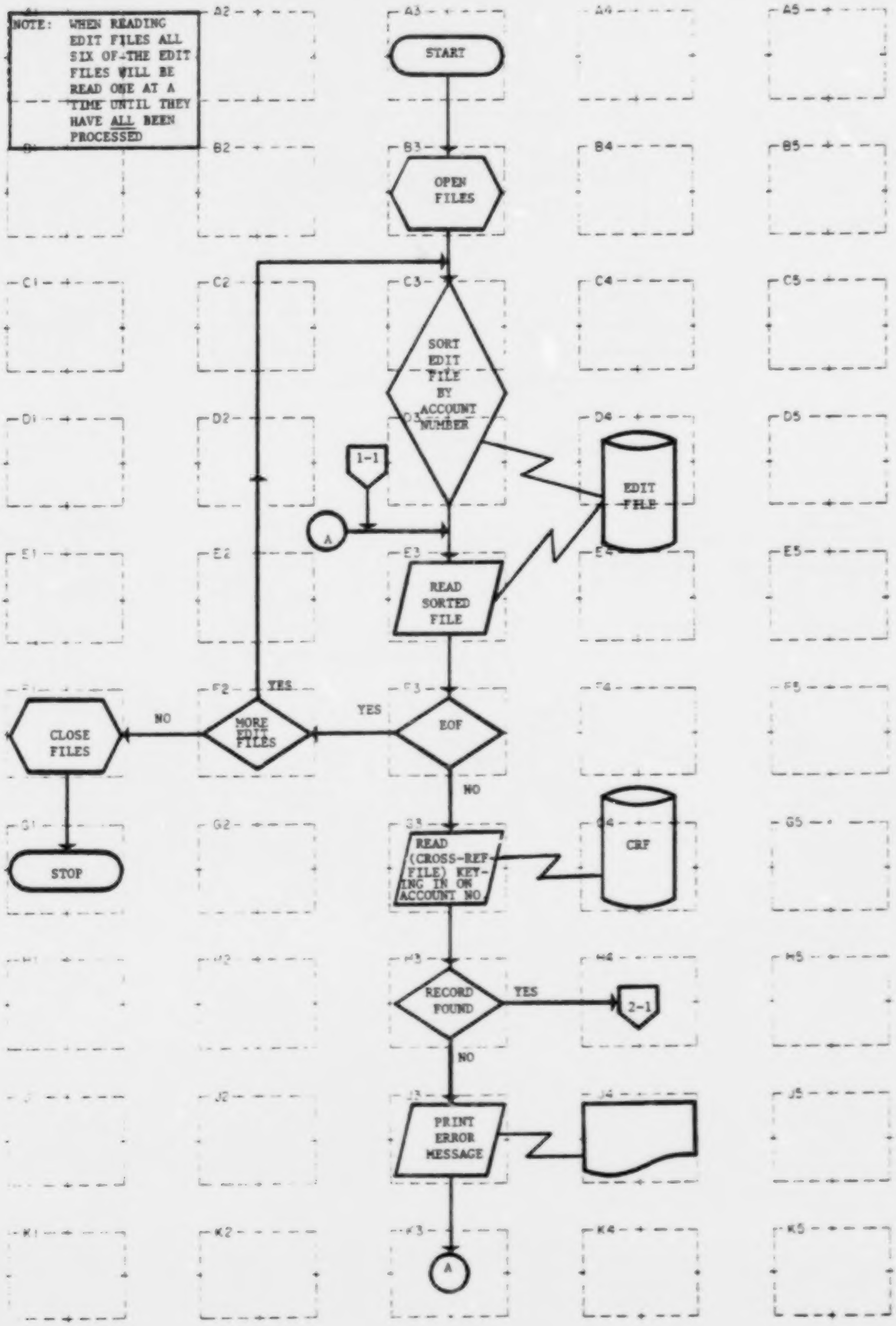

START
OPEN FILES
READ DATE-TITLE CARD
PRER
WRITE DATE-TITLE CARD ON DISK FILE
2
READ DATA
EOF
YES
NO
PRINT SUB-TOTAL FOR PREVIOUS EMPLOYEE
PRINT GRAND TOTAL
CLOSE FILES
STOP
IS THIS PAYROLL DATA
NO
PRINT ERROR MESSAGE
YES
NEW EMPLOYEE & PAY PERIOD
YES
PRINT SUB-TOTAL FOR PREVIOUS EMPLOYEE
NO
SAVE NEW EMPLOYEE NO. AND DATE
1


1
IS ACCT. NO. VALID
NO
FLAG ERROR
YES
IS THERE A COST CENTER
YES
IS COST CENTER VALID
NO
FLAG ERROR
YES
NO
IS THERE A COST CATEGORY
YES
COST CATEGORY VALID
NO
FLAG ERROR
YES
NO
ANY ERRORS FLAGGED
YES
MOVE ERROR MESSAGES TO PRINT LINE BUFFER
NO
PREP
WRITE RECORD ON DISK
PRINT RECORD
2

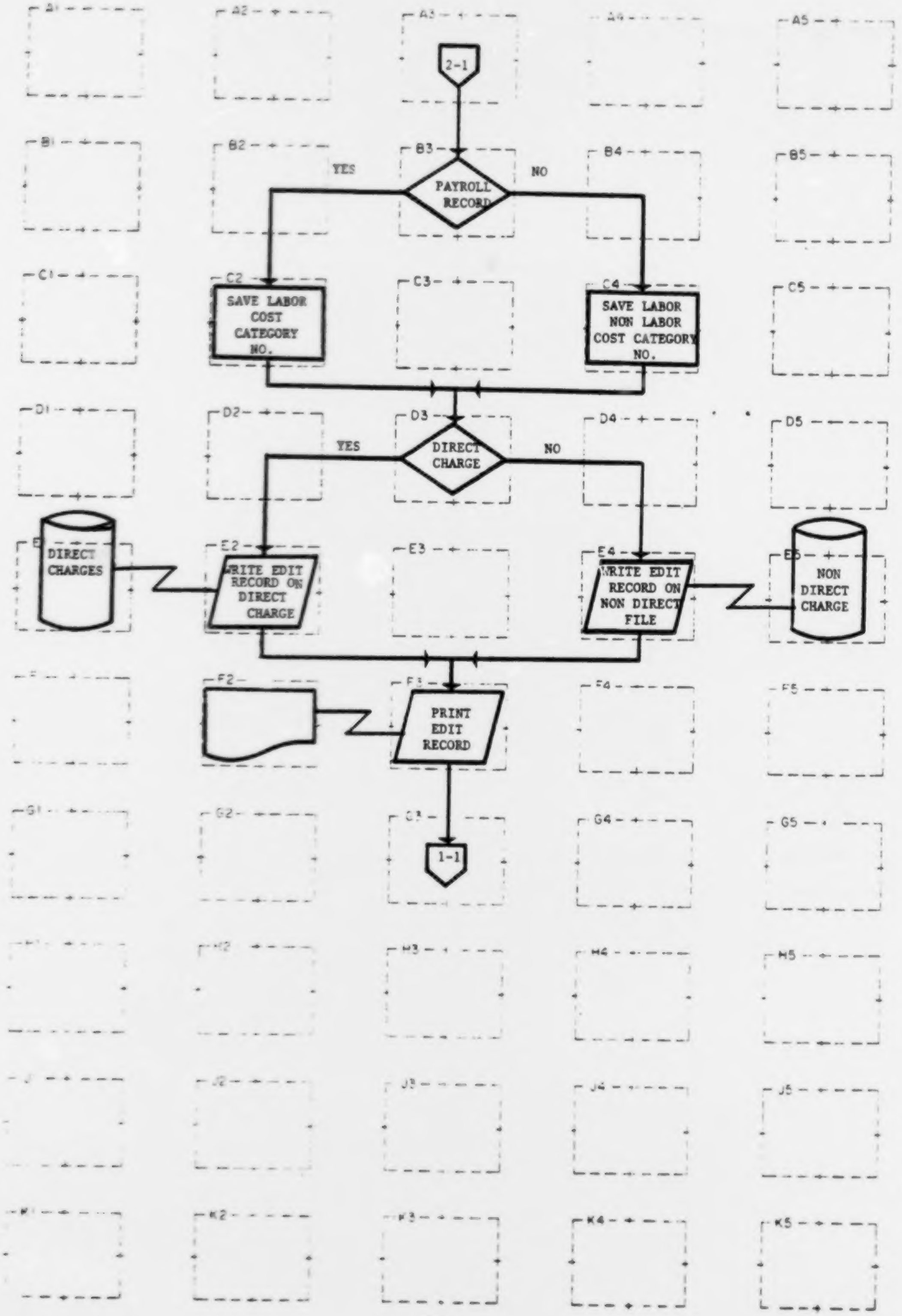

START
OPEN FILES
READ DATE-TITLE RECORDS
EOF
YES
NO
C
CLOSE FILES
STOP
SAVE DATE-TITLE
SORT EDIT FILE INTO A TEMP SORT FILE BY ACCT. NO.
TEMP
TEMP
B
READ SORTED FILE
EOF
YES
NO
A
PRINT SUBTOTALS
PRINT GRAND TOTALS
C
A
NEW ACCOUNT NO.
NO
YES
PRINT SUBTOTALS
SAVE NEW ACCT. NO. ZERO SUBTOTAL
PRINT EDIT RECORD
ACCUMULATE ACCOUNT VALUES IN SUBTOTAL
B


START
OPEN FILES
PAYROLL FILE
REQ STOCK FILE
PAYMENT-AUTH. FILE
SERVICE CONTRACT FILE
MISC. TRANS FILE
DEP FILE
MERGE ALL EDIT FILES INTO A TEMP FILE
TEMP
SORT TEMP FILE BY ACCT. NO. AND COUNTY CODE
2
READ SORTED FILE
DATE TITLE RECORD SAVED
YES
NO
SAVE DATE-TITLE RECORD
EOF
YES
NO
DATE TITLE RECORD
YES
NO
1
PRINT SUBTOTAL FOR UTILITY
PRINT GRAND TOTAL FOR ALL UTILITIES
CLOSE FILES
STOP


1
NEW ACCT. NO.
NO
ACCUMULATE VALUES BY ACCT. NO.
YES
PRINT ACCUMULATED VALUES BY ACCT. NO.
ZERO ACCUMULATED
NEW UTILITY CODE
NO
YES
PRINT SUBTOTAL FOR UTILITY
ZERO SUBTOTAL
2


NOTE: WHEN READING EDIT FILES ALL SIX OF THE EDIT FILES WILL BE READ ONE AT A TIME UNTIL THEY HAVE ALL BEEN PROCESSED

START
OPEN FILES
SORT EDIT FILE BY ACCOUNT NUMBER
EDIT FILE
1-1
A
READ SORTED FILE
EOF
YES
MORE EDIT FILES
YES
NO
CLOSE FILES
STOP
NO
READ (CROSS-REF FILE) KEYING IN ON ACCOUNT NO
CRF
RECORD FOUND
YES
2-1
NO
PRINT ERROR MESSAGE
A


2-1
PAYROLL RECORD
YES
NO
SAVE LABOR COST CATEGORY NO.
SAVE LABOR NON LABOR COST CATEGORY NO.
DIRECT CHARGE
YES
NO
DIRECT CHARGES
WRITE EDIT RECORD ON DIRECT CHARGE
WRITE EDIT RECORD ON NON DIRECT FILE
NON DIRECT CHARGE
PRINT EDIT RECORD
1-1

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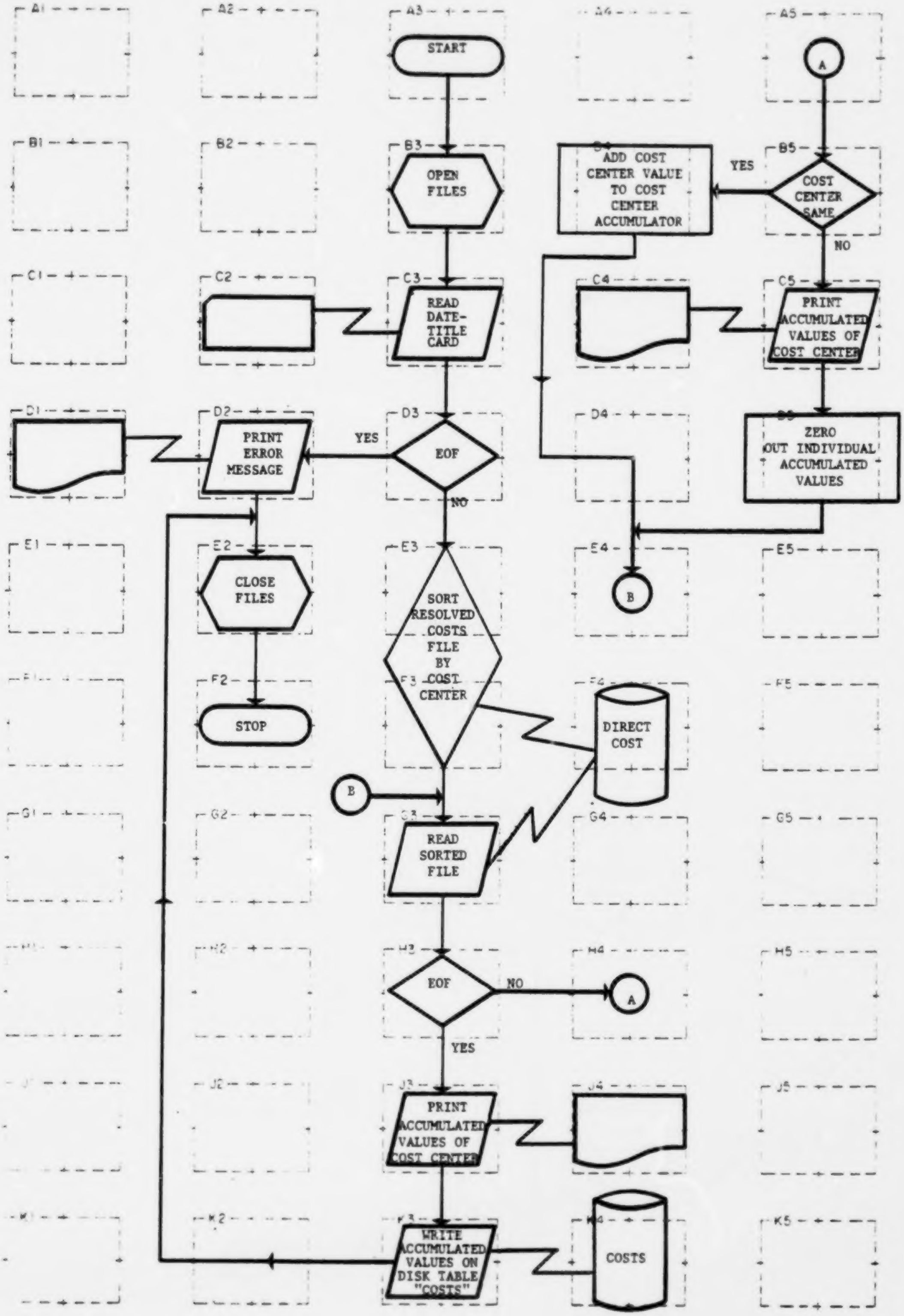
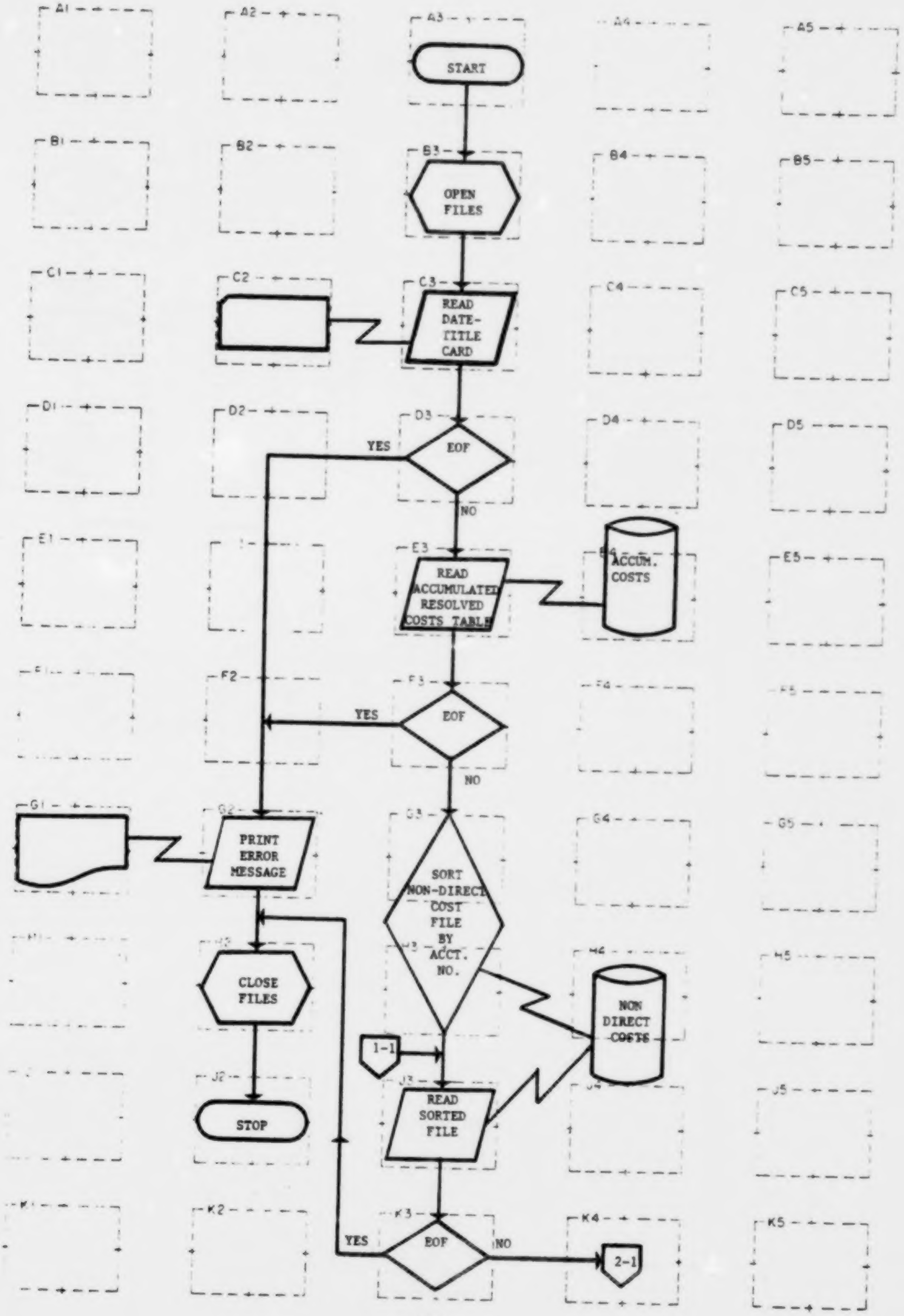
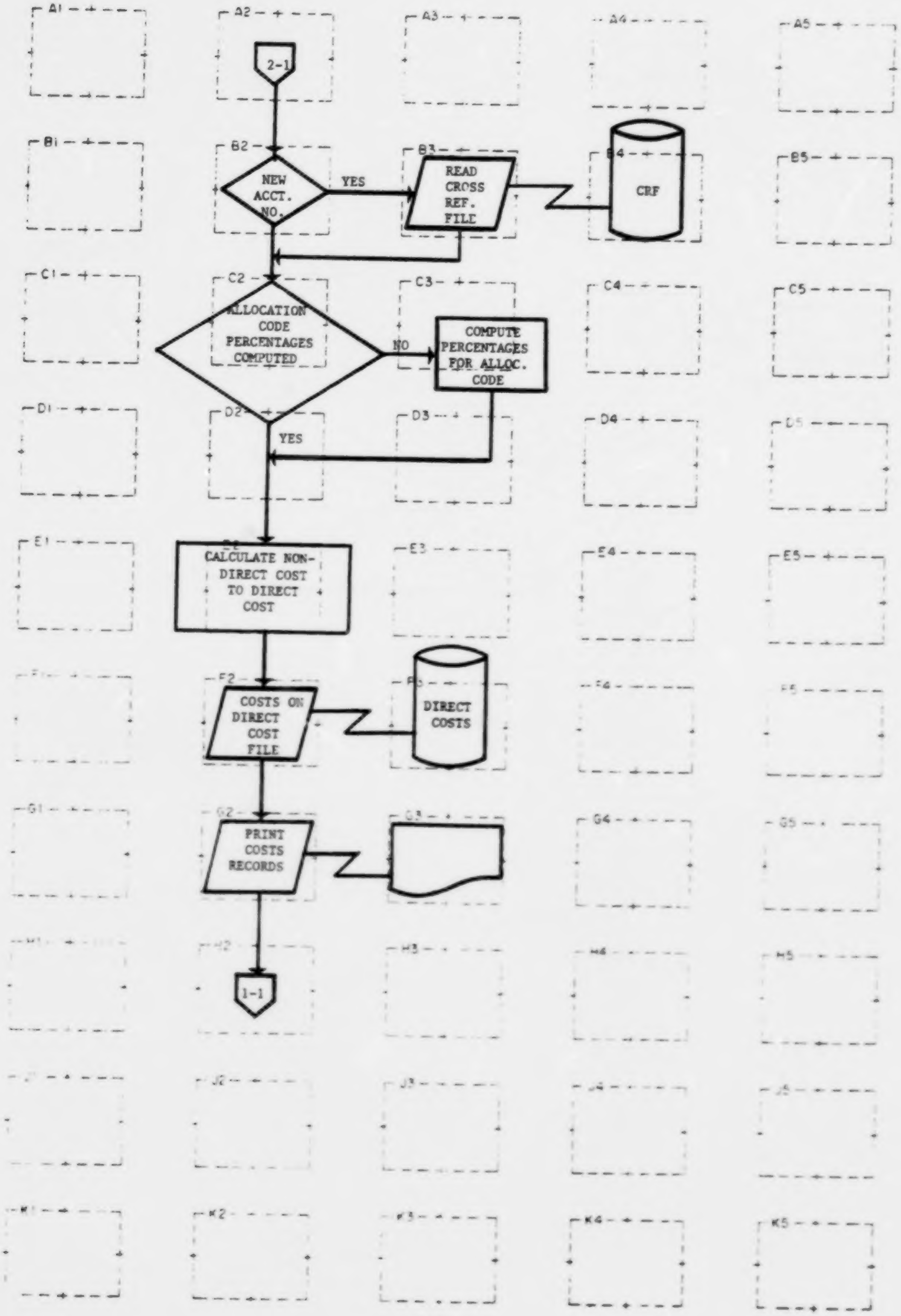
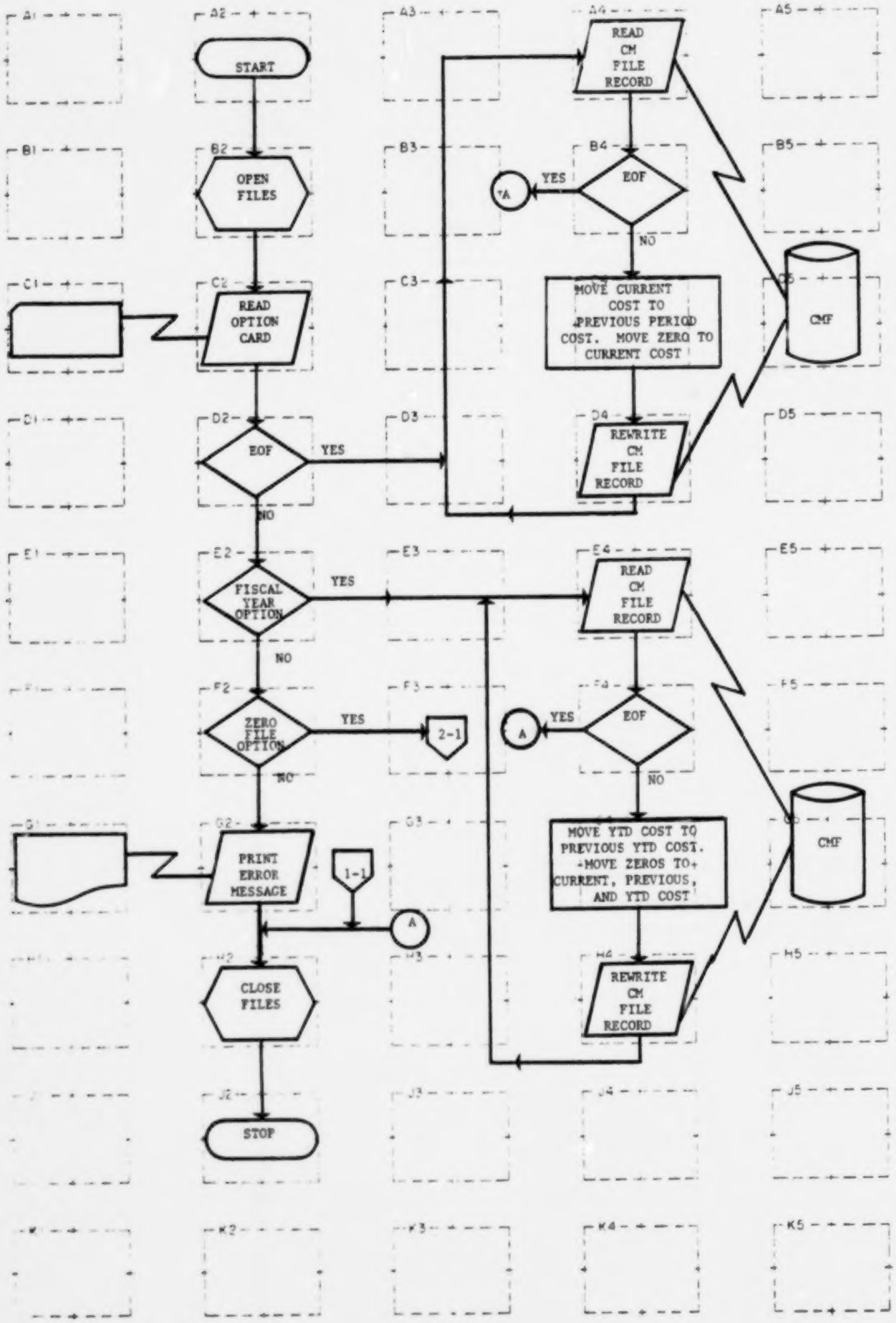
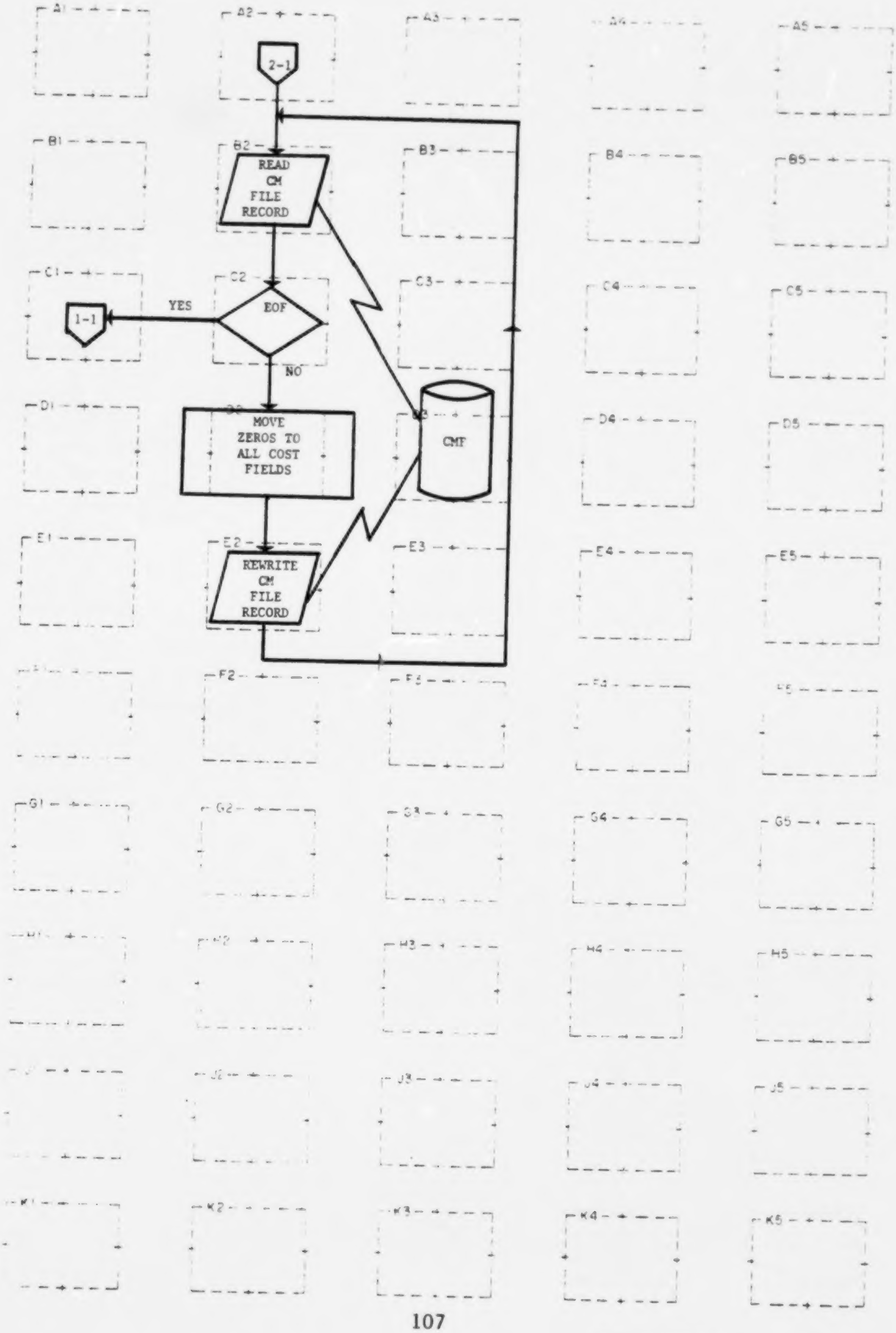

START
OPEN FILES
READ DATE-TITLE CARD
EOF
YES
PRINT ERROR MESSAGE
CLOSE FILES
STOP
NO
SORT RESOLVED COSTS FILE BY COST CENTER
DIRECT COST
B
READ SORTED FILE
EOF
NO
A
YES
PRINT ACCUMULATED VALUES OF COST CENTER
WRITE ACCUMULATED VALUES ON DISK TABLE "COSTS"
COSTS
A
COST CENTER SAME
YES
ADD COST CENTER VALUE TO COST CENTER ACCUMULATOR
NO
PRINT ACCUMULATED VALUES OF COST CENTER
ZERO OUT INDIVIDUAL ACCUMULATED VALUES
B


START
OPEN FILES
READ DATE-TITLE CARD
EOF
YES
NO
READ ACCUMULATED RESOLVED COSTS TABLE
ACCUM. COSTS
EOF
YES
NO
PRINT ERROR MESSAGE
SORT NON-DIRECT COST FILE BY ACCT. NO.
NON DIRECT COSTS
CLOSE FILES
1-1
READ SORTED FILE
STOP
EOF
YES
NO
2-1
A1
A2
A3
A4
A5
B1
B2
B3
B4
B5
C1
C2
C3
C4
C5
D1
D2
D3
D4
D5
E1
E3
E4
E5
F2
F3
F4
F5
G1
G2
G3
G4
G5
H4
H5
J2
J5
K2
K3
K4
K5


2-1
NEW ACCT. NO.
YES
READ CROSS REF. FILE
CRF
ALLOCATION CODE PERCENTAGES COMPUTED
NO
COMPUTE PERCENTAGES FOR ALLOC. CODE
YES
CALCULATE NON-DIRECT COST TO DIRECT COST
COSTS ON DIRECT COST FILE
DIRECT COSTS
PRINT COSTS RECORDS
1-1


START
OPEN FILES
READ OPTION CARD
EOF
YES
NO
FISCAL YEAR OPTION
YES
NO
ZERO FILE OPTION
YES
2-1
NO
PRINT ERROR MESSAGE
1-1
A
CLOSE FILES
STOP
READ CM FILE RECORD
EOF
YES
A
NO
MOVE CURRENT COST TO PREVIOUS PERIOD COST. MOVE ZERO TO CURRENT COST
REWRITE CM FILE RECORD
CMF
READ CM FILE RECORD
EOF
YES
A
NO
MOVE YTD COST TO PREVIOUS YTD COST. MOVE ZEROS TO CURRENT, PREVIOUS, AND YTD COST
REWRITE CM FILE RECORD
CMF
A1
A2
A3
A4
A5
B1
B2
B3
B4
B5
C1
C2
C3
C5
D1
D2
D3
D4
D5
E1
E2
E3
E4
E5
F2
F3
F4
F5
G1
G2
G3
H2
H3
H4
H5
J2
J3
J4
J5
K2
K3
K4
K5


2-1
B2
READ CM FILE RECORD
C2
EOF
YES
1-1
NO
MOVE ZEROS TO ALL COST FIELDS
CMF
E2
REWRITE CM FILE RECORD

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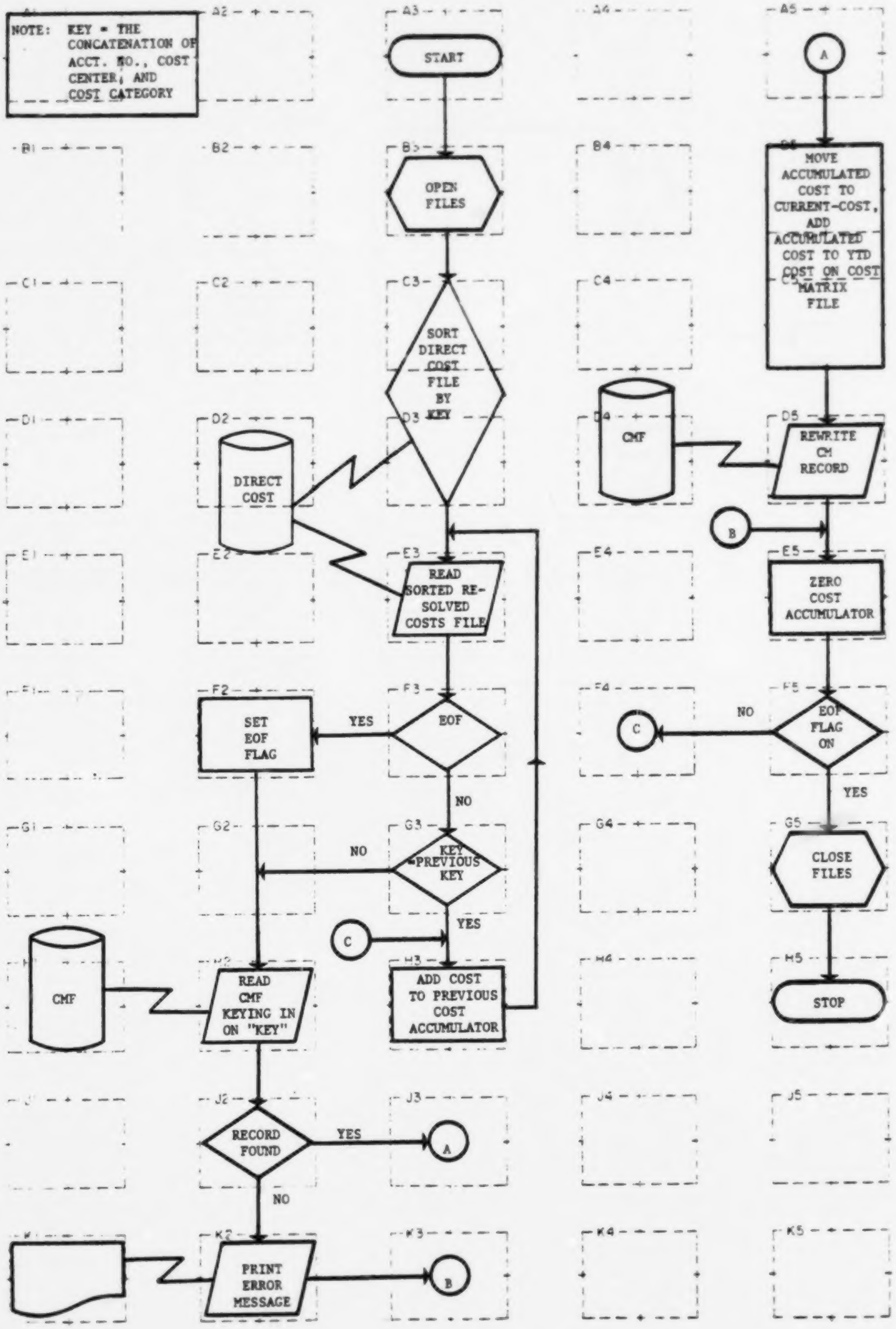
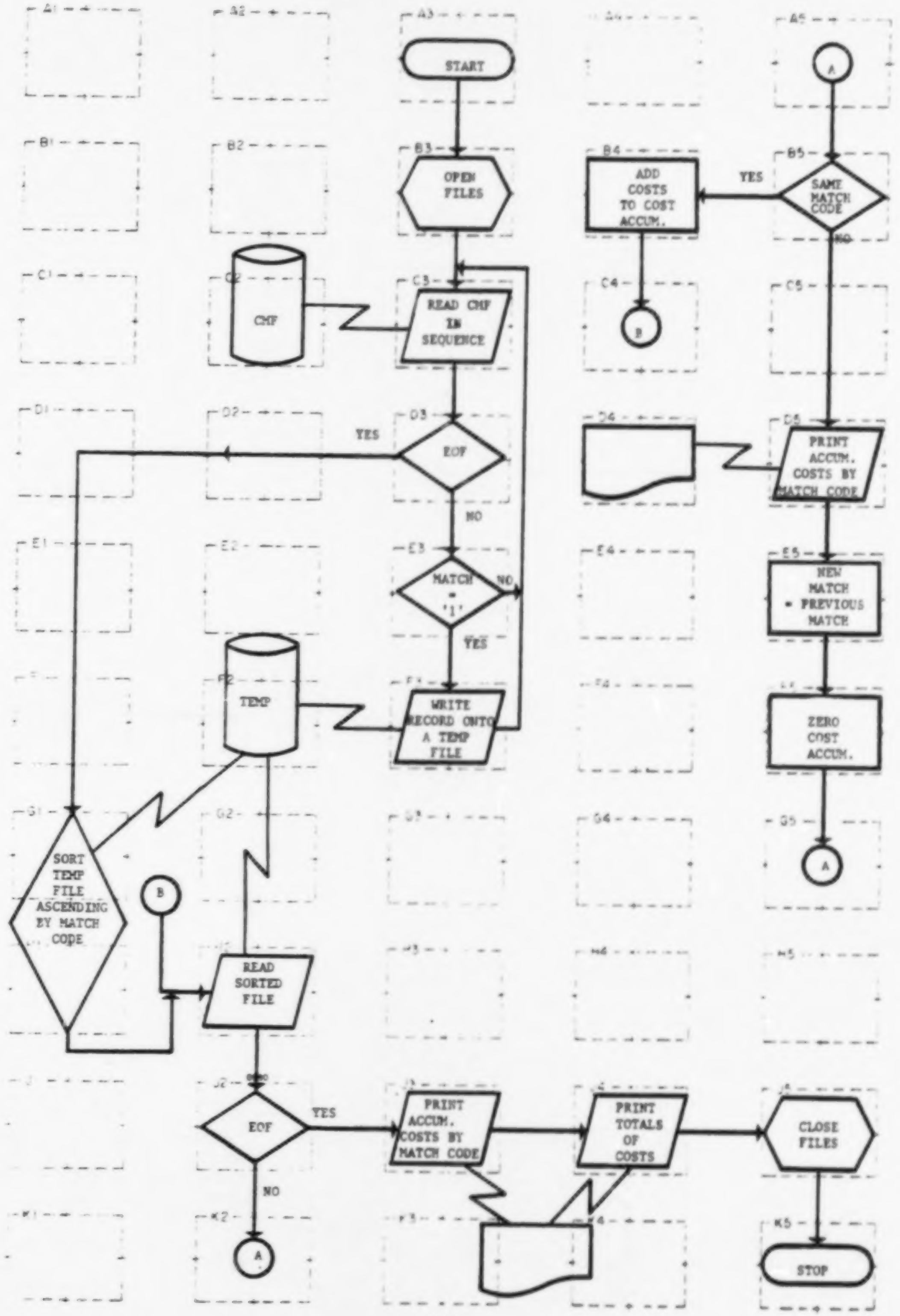
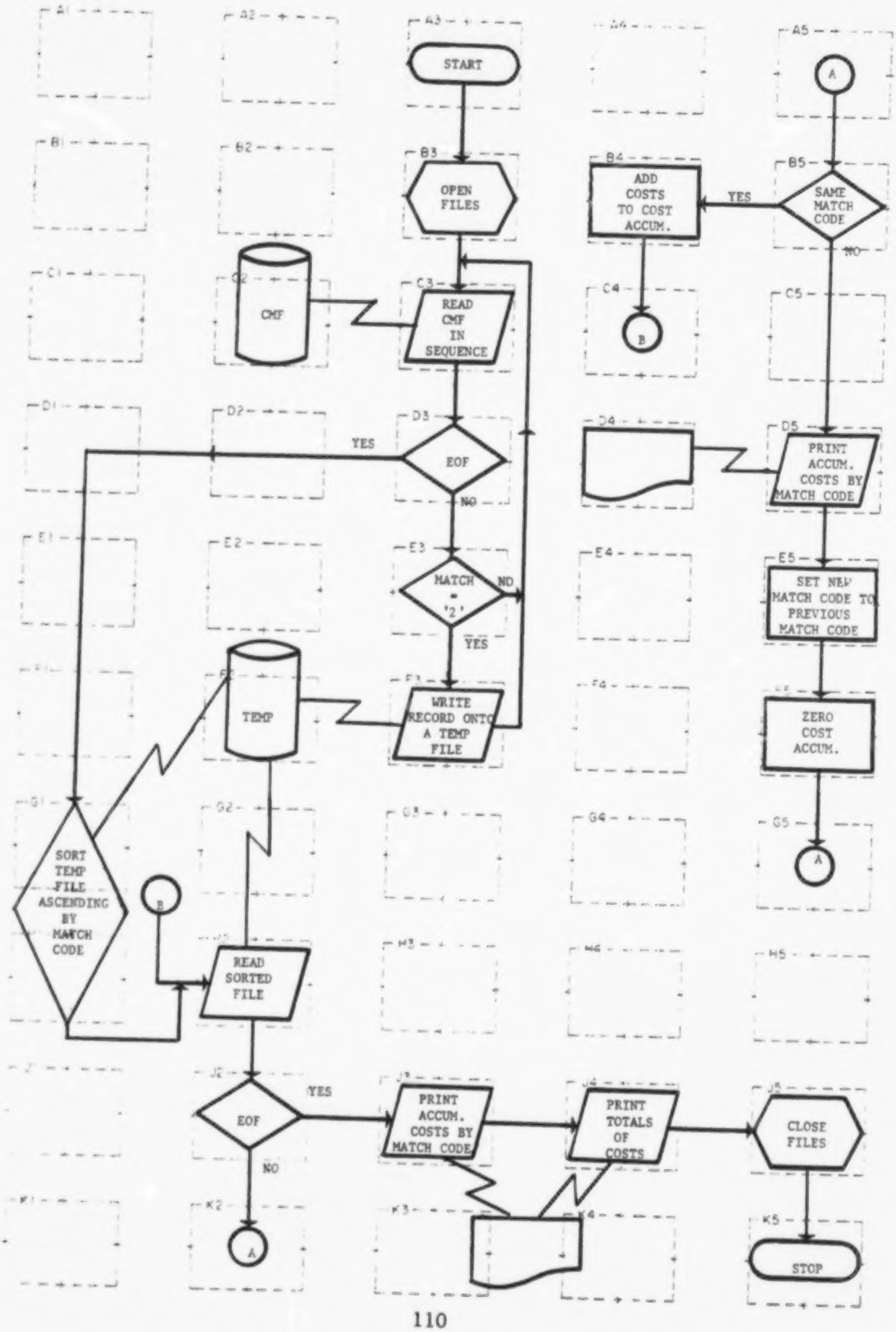
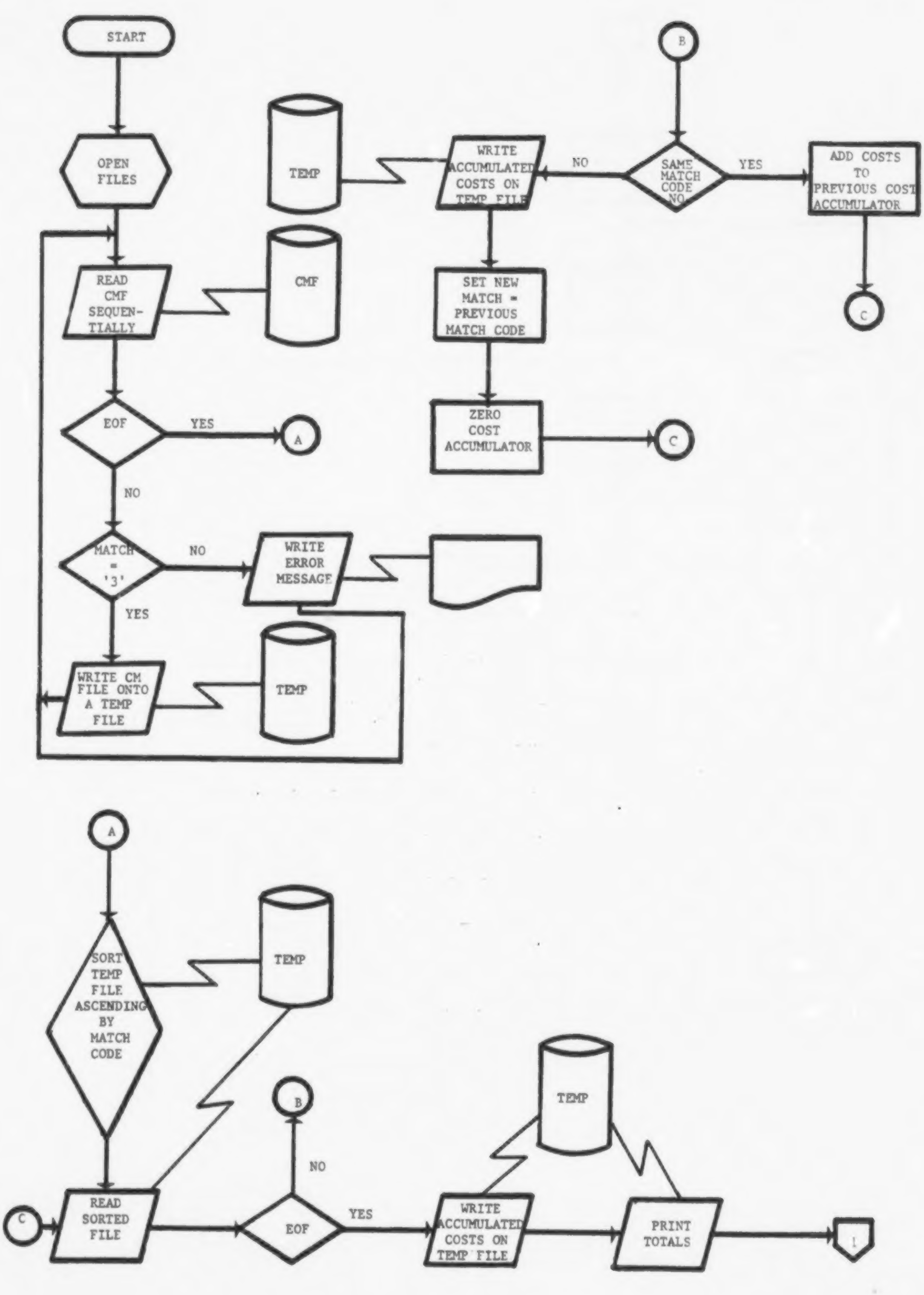
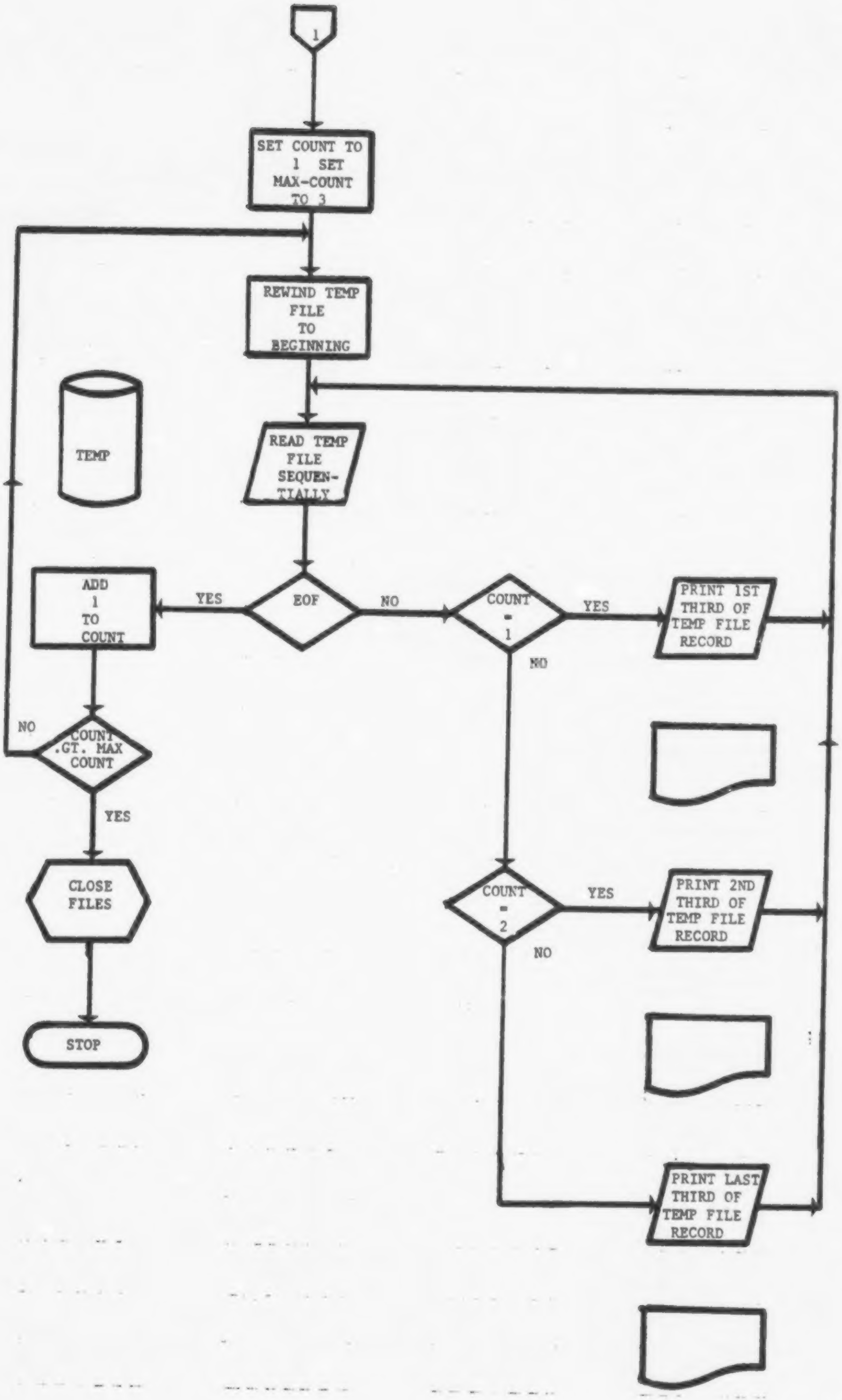
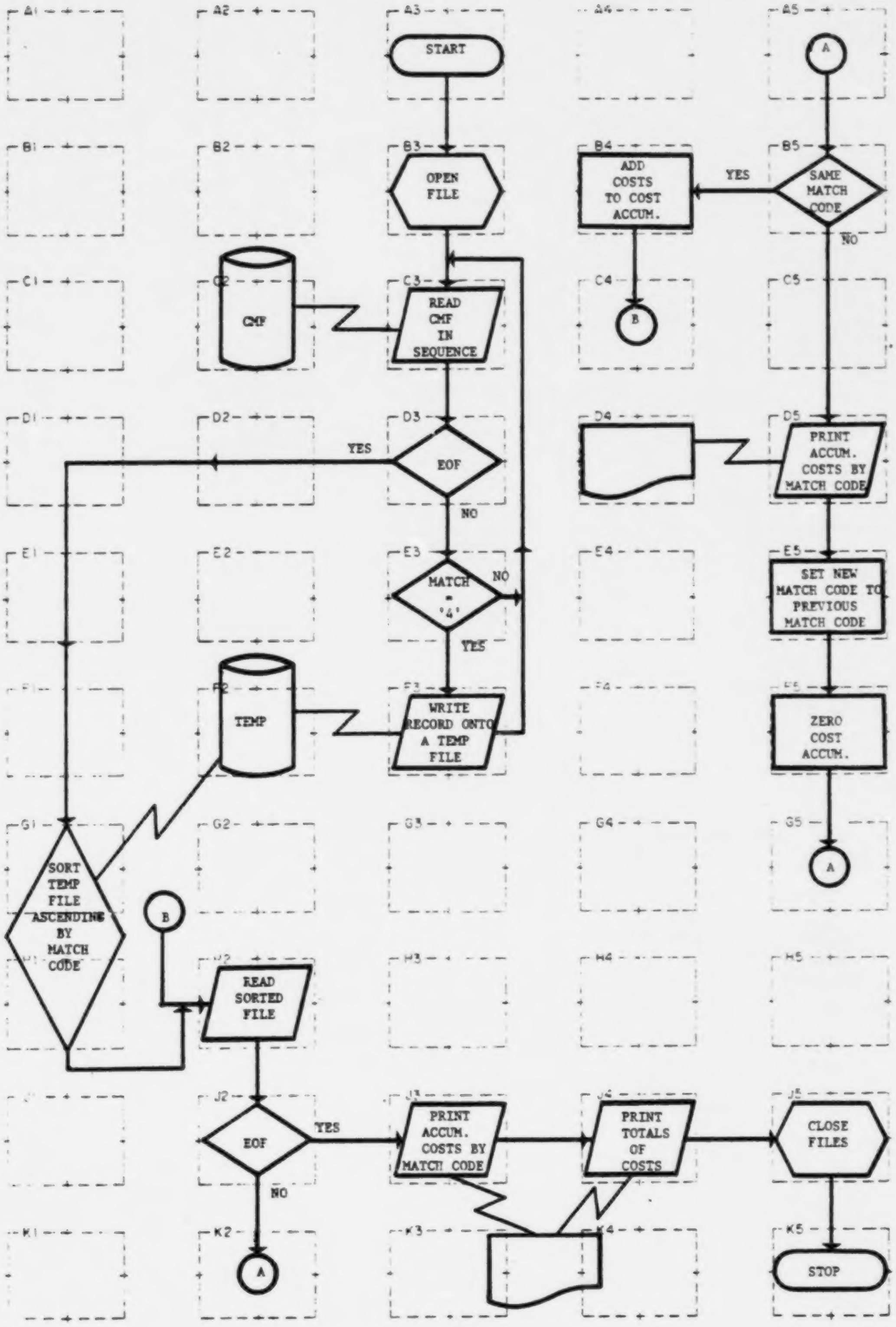

NOTE: KEY = THE CONCATENATION OF ACCT. NO., COST CENTER, AND COST CATEGORY
A1
A2
A3
A4
A5
START
A
B1
B2
B3
B4
B5
OPEN FILES
MOVE ACCUMULATED COST TO CURRENT-COST, ADD ACCUMULATED COST TO YTD COST ON COST MATRIX FILE
C1
C2
C3
C4
C5
SORT DIRECT COST FILE BY KEY
D1
D2
D3
D4
D5
DIRECT COST
CMF
REWRITE CM RECORD
B
E1
E2
E3
E4
E5
READ SORTED RE-SOLVED COSTS FILE
ZERO COST ACCUMULATOR
F1
F2
F3
F4
F5
SET EOF FLAG
YES
EOF
NO
C
NO
EOF FLAG ON
YES
G1
G2
G3
G4
G5
NO
KEY =PREVIOUS KEY
YES
CLOSE FILES
C
H1
H2
H3
H4
H5
CMF
READ CMF KEYING IN ON "KEY"
ADD COST TO PREVIOUS COST ACCUMULATOR
STOP
J1
J2
J3
J4
J5
RECORD FOUND
YES
A
NO
K1
K2
K3
K4
K5
PRINT ERROR MESSAGE
B

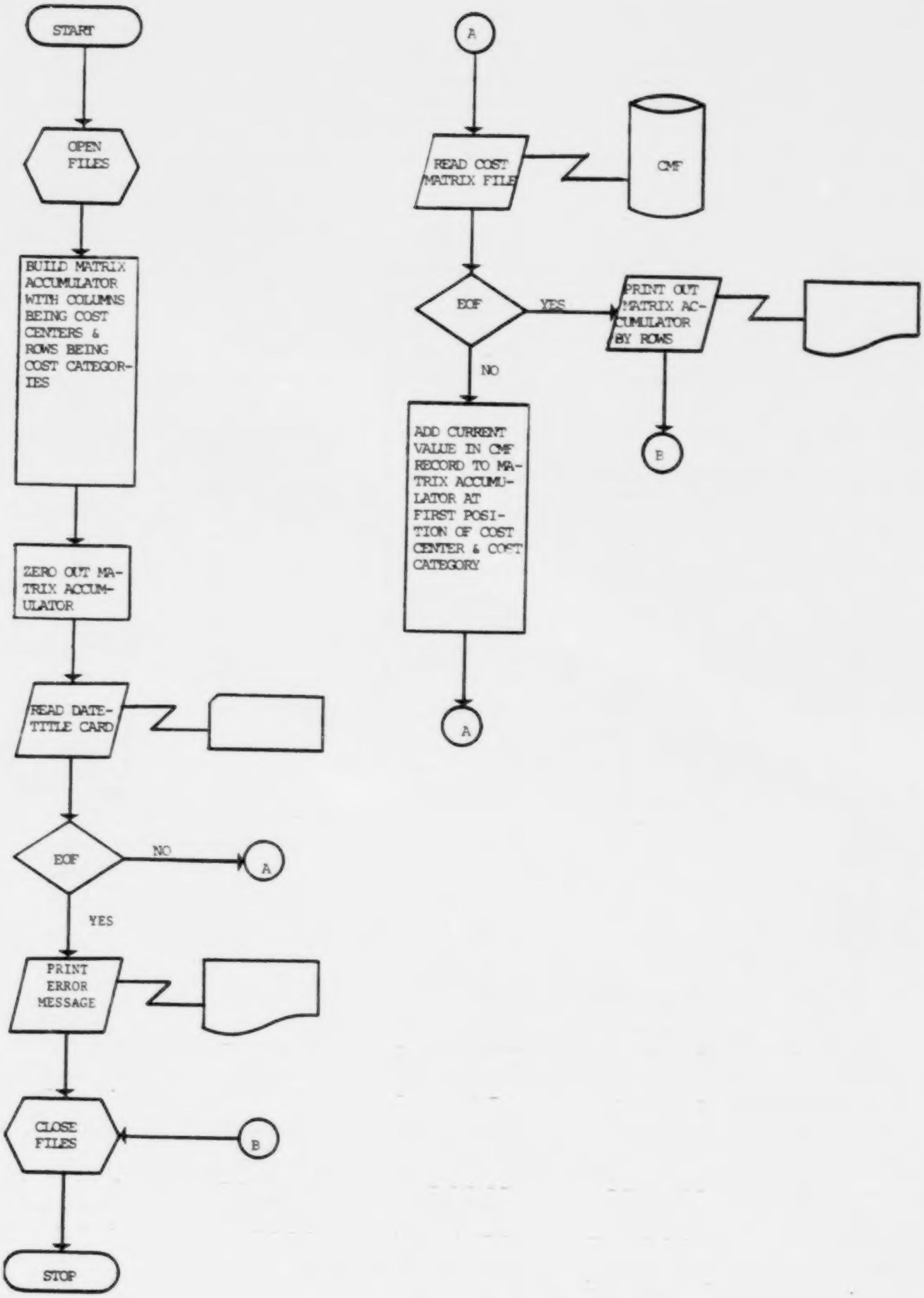

START
OPEN FILES
CMF
READ CMF IN SEQUENCE
EOF
YES
NO
MATCH = '1'
NO
YES
TEMP
WRITE RECORD ONTO A TEMP FILE
SORT TEMP FILE ASCENDING BY MATCH CODE
B
READ SORTED FILE
EOF
YES
NO
A
PRINT ACCUM. COSTS BY MATCH CODE
PRINT TOTALS OF COSTS
CLOSE FILES
STOP
A
SAME MATCH CODE
YES
ADD COSTS TO COST ACCUM.
B
NO
PRINT ACCUM. COSTS BY MATCH CODE
NEW MATCH = PREVIOUS MATCH
ZERO COST ACCUM.
A

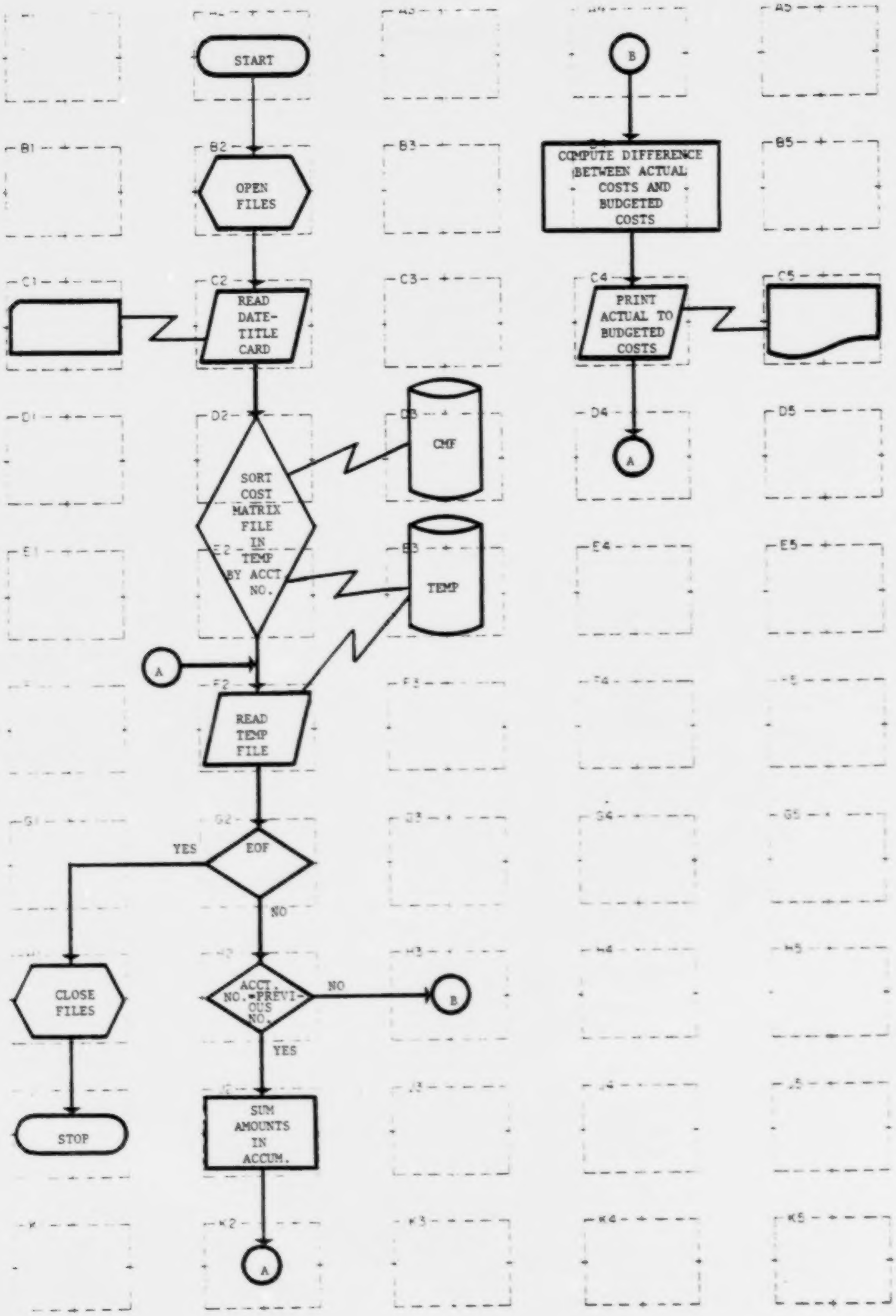

START
OPEN FILES
CMF
READ CMF IN SEQUENCE
EOF
YES
NO
MATCH = '2'
NO
YES
TEMP
WRITE RECORD ONTO A TEMP FILE
SORT TEMP FILE ASCENDING BY MATCH CODE
B
READ SORTED FILE
EOF
YES
NO
A
PRINT ACCUM. COSTS BY MATCH CODE
PRINT TOTALS OF COSTS
CLOSE FILES
STOP
A
SAME MATCH CODE
YES
NO
ADD COSTS TO COST ACCUM.
B
PRINT ACCUM. COSTS BY MATCH CODE
SET NEW MATCH CODE TO PREVIOUS MATCH CODE
ZERO COST ACCUM.
A

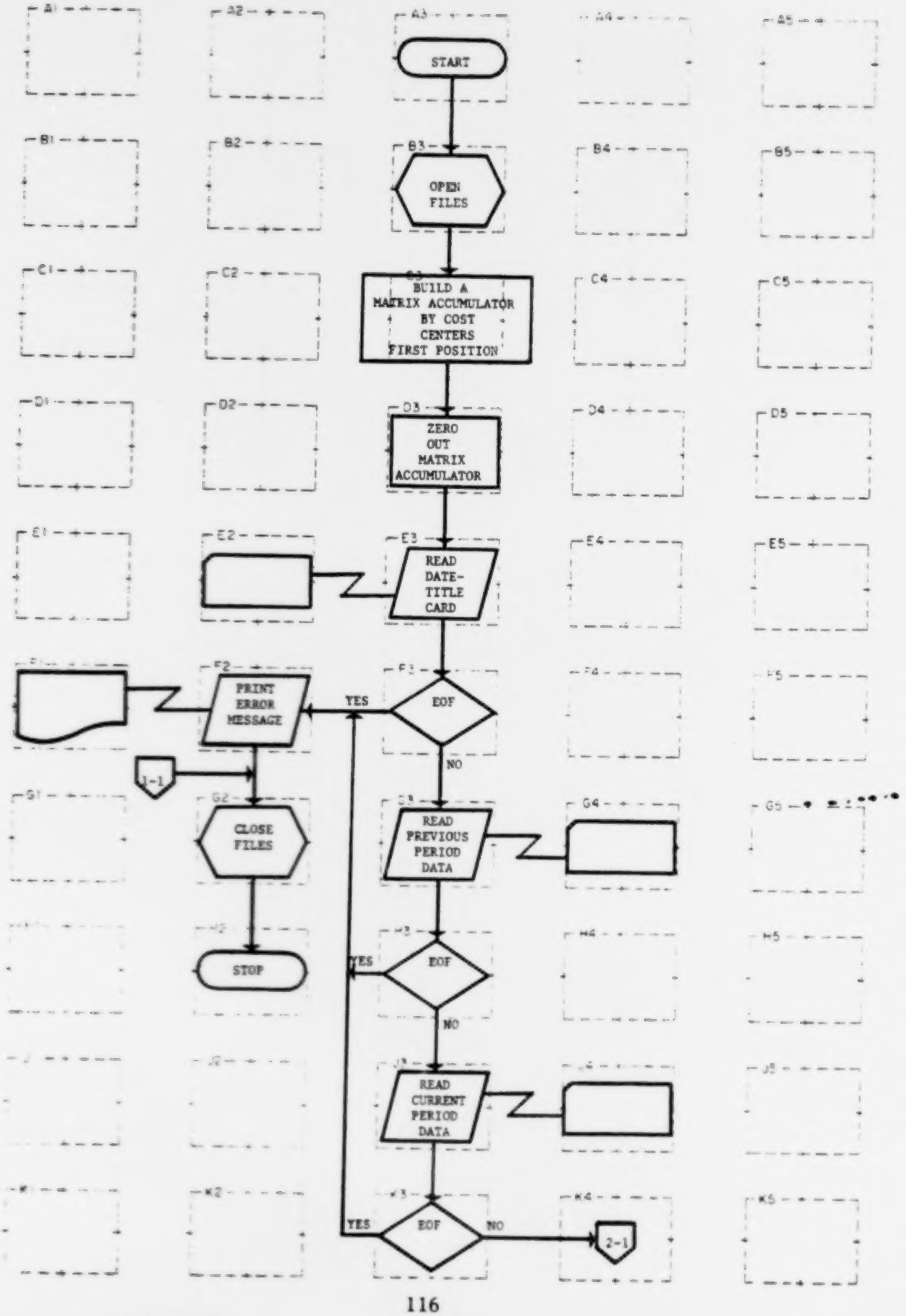

START
OPEN FILES
READ CMF SEQUENTIALLY
CMF
EOF
YES
A
NO
MATCH = '3'
NO
WRITE ERROR MESSAGE
YES
WRITE CM FILE ONTO A TEMP FILE
TEMP
TEMP
WRITE ACCUMULATED COSTS ON TEMP FILE
NO
B
SAME MATCH CODE NO.
YES
ADD COSTS TO PREVIOUS COST ACCUMULATOR
C
SET NEW MATCH = PREVIOUS MATCH CODE
ZERO COST ACCUMULATOR
C
A
SORT TEMP FILE ASCENDING BY MATCH CODE
TEMP
B
NO
C
READ SORTED FILE
EOF
YES
WRITE ACCUMULATED COSTS ON TEMP FILE
TEMP
PRINT TOTALS
I


1
SET COUNT TO 1 SET MAX-COUNT TO 3
REWIND TEMP FILE TO BEGINNING
TEMP
READ TEMP FILE SEQUEN-TIALLY
EOF
YES
NO
ADD 1 TO COUNT
COUNT .GT. MAX COUNT
NO
YES
CLOSE FILES
STOP
COUNT = 1
YES
NO
PRINT 1ST THIRD OF TEMP FILE RECORD
COUNT = 2
YES
NO
PRINT 2ND THIRD OF TEMP FILE RECORD
PRINT LAST THIRD OF TEMP FILE RECORD


START
OPEN FILE
CMF
READ CMF IN SEQUENCE
EOF
YES
NO
MATCH = '4'
NO
YES
TEMP
WRITE RECORD ONTO A TEMP FILE
SORT TEMP FILE ASCENDING BY MATCH CODE
B
READ SORTED FILE
EOF
YES
NO
A
PRINT ACCUM. COSTS BY MATCH CODE
PRINT TOTALS OF COSTS
CLOSE FILES
STOP
A
SAME MATCH CODE
YES
NO
ADD COSTS TO COST ACCUM.
B
PRINT ACCUM. COSTS BY MATCH CODE
SET NEW MATCH CODE TO PREVIOUS MATCH CODE
ZERO COST ACCUM.
A


START
OPEN FILES
BUILD MATRIX ACCUMULATOR WITH COLUMNS BEING COST CENTERS & ROWS BEING COST CATEGORIES
ZERO OUT MATRIX ACCUMULATOR
READ DATE-TITTLE CARD
EOF
NO
A
YES
PRINT ERROR MESSAGE
CLOSE FILES
B
STOP
A
READ COST MATRIX FILE
CMF
EOF
YES
PRINT OUT MATRIX ACCUMULATOR BY ROWS
B
NO
ADD CURRENT VALUE IN CMF RECORD TO MATRIX ACCUMULATOR AT FIRST POSITION OF COST CENTER & COST CATEGORY
A


START
OPEN FILES
READ DATE-TITLE CARD
SORT COST MATRIX FILE IN TEMP BY ACCT NO.
CMF
TEMP
A
READ TEMP FILE
EOF
YES
NO
CLOSE FILES
STOP
ACCT. NO.=PREVIOUS NO.
NO
B
YES
SUM AMOUNTS IN ACCUM.
A
B
COMPUTE DIFFERENCE BETWEEN ACTUAL COSTS AND BUDGETED COSTS
PRINT ACTUAL TO BUDGETED COSTS
A
B1
B2
B3
B4
B5
C1
C2
C3
C4
C5
D1
D2
D3
D4
D5
E1
E2
E3
E4
E5
F2
F3
F4
G1
G2
G3
G4
G5
H3
H4
H5
J3
K2
K3
K4
K5
A5


START
OPEN FILES
BUILD A MATRIX ACCUMULATOR BY COST CENTERS FIRST POSITION
ZERO OUT MATRIX ACCUMULATOR
READ DATE-TITLE CARD
EOF
YES
NO
PRINT ERROR MESSAGE
1-1
CLOSE FILES
STOP
READ PREVIOUS PERIOD DATA
EOF
YES
NO
READ CURRENT PERIOD DATA
EOF
YES
NO
2-1

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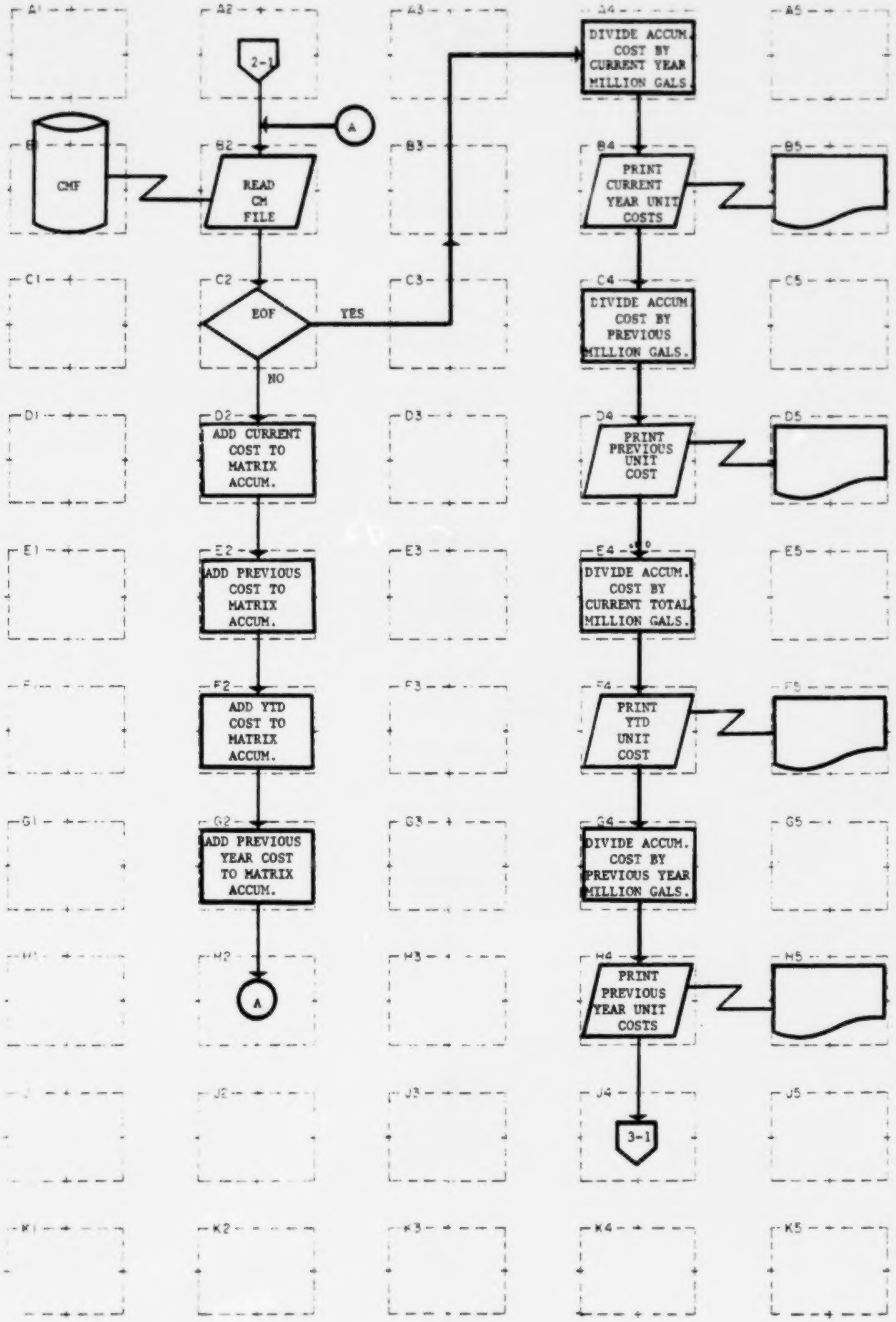
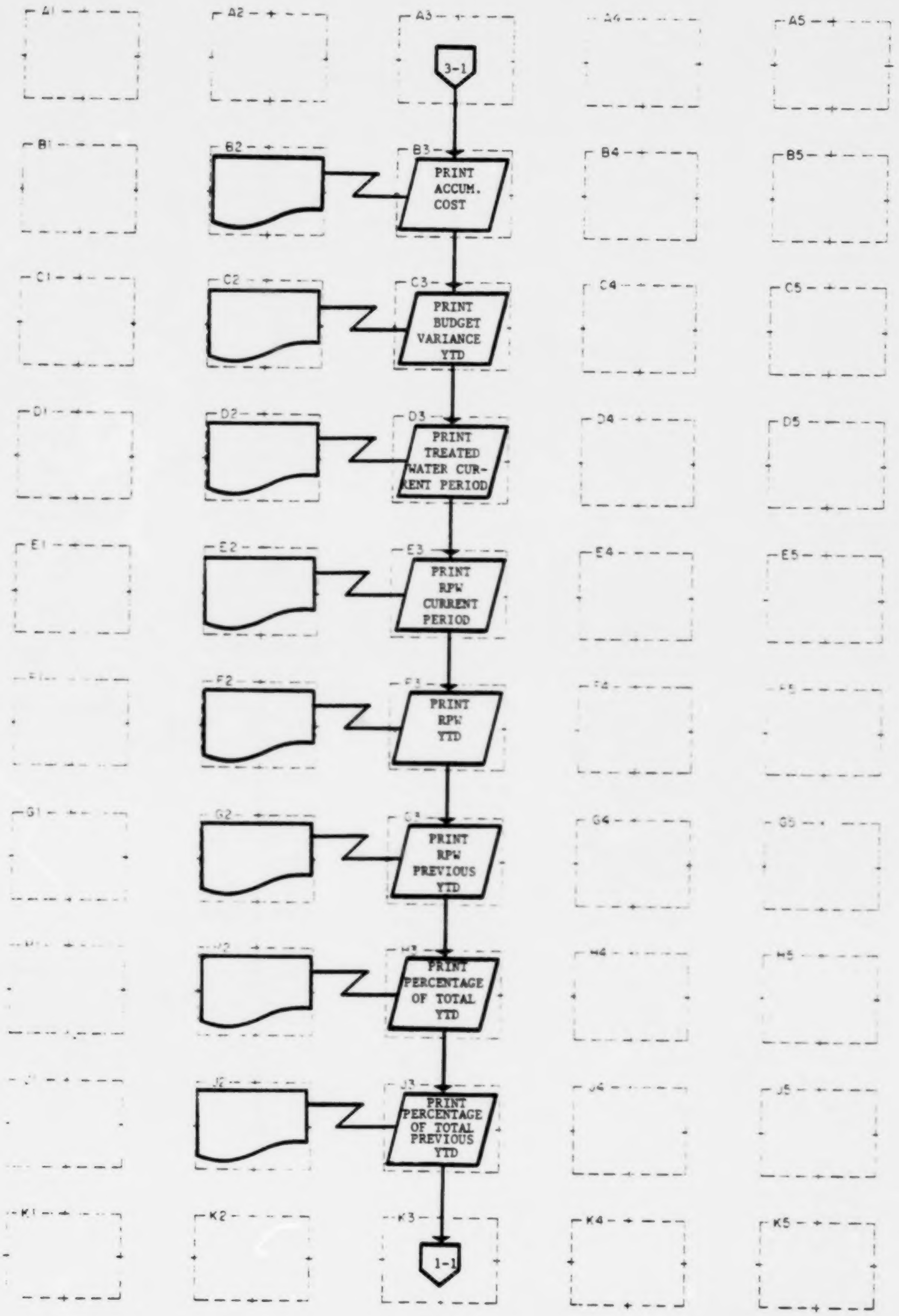

2-1
A
CMF
READ CM FILE
EOF
YES
NO
ADD CURRENT COST TO MATRIX ACCUM.
ADD PREVIOUS COST TO MATRIX ACCUM.
ADD YTD COST TO MATRIX ACCUM.
ADD PREVIOUS YEAR COST TO MATRIX ACCUM.
A
DIVIDE ACCUM. COST BY CURRENT YEAR MILLION GALS.
PRINT CURRENT YEAR UNIT COSTS
DIVIDE ACCUM COST BY PREVIOUS MILLION GALS.
PRINT PREVIOUS UNIT COST
DIVIDE ACCUM. COST BY CURRENT TOTAL MILLION GALS.
PRINT YTD UNIT COST
DIVIDE ACCUM. COST BY PREVIOUS YEAR MILLION GALS.
PRINT PREVIOUS YEAR UNIT COSTS
3-1


3-1
PRINT ACCUM. COST
PRINT BUDGET VARIANCE YTD
PRINT TREATED WATER CURRENT PERIOD
PRINT RPW CURRENT PERIOD
PRINT RPW YTD
PRINT RPW PREVIOUS YTD
PRINT PERCENTAGE OF TOTAL YTD
PRINT PERCENTAGE OF TOTAL PREVIOUS YTD
1-1
A1
A2
A3
A4
A5
B1
B2
B3
B4
B5
C1
C2
C3
C4
C5
D1
D2
D3
D4
D5
E1
E2
E3
E4
E5
F2
F4
F5
G1
G2
G4
G5
H4
H5
J2
J3
J5
K1
K2
K3
K4
K5

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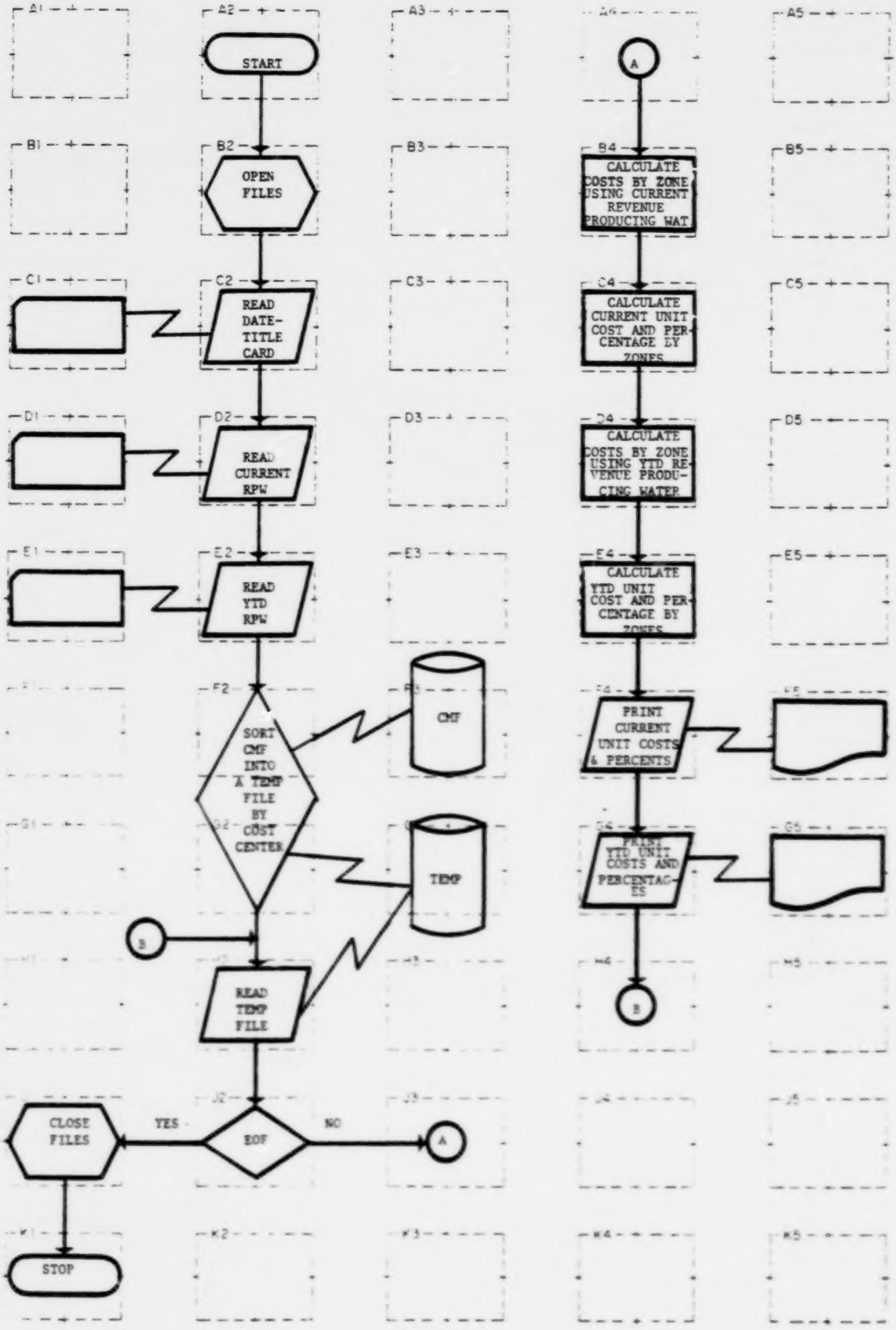
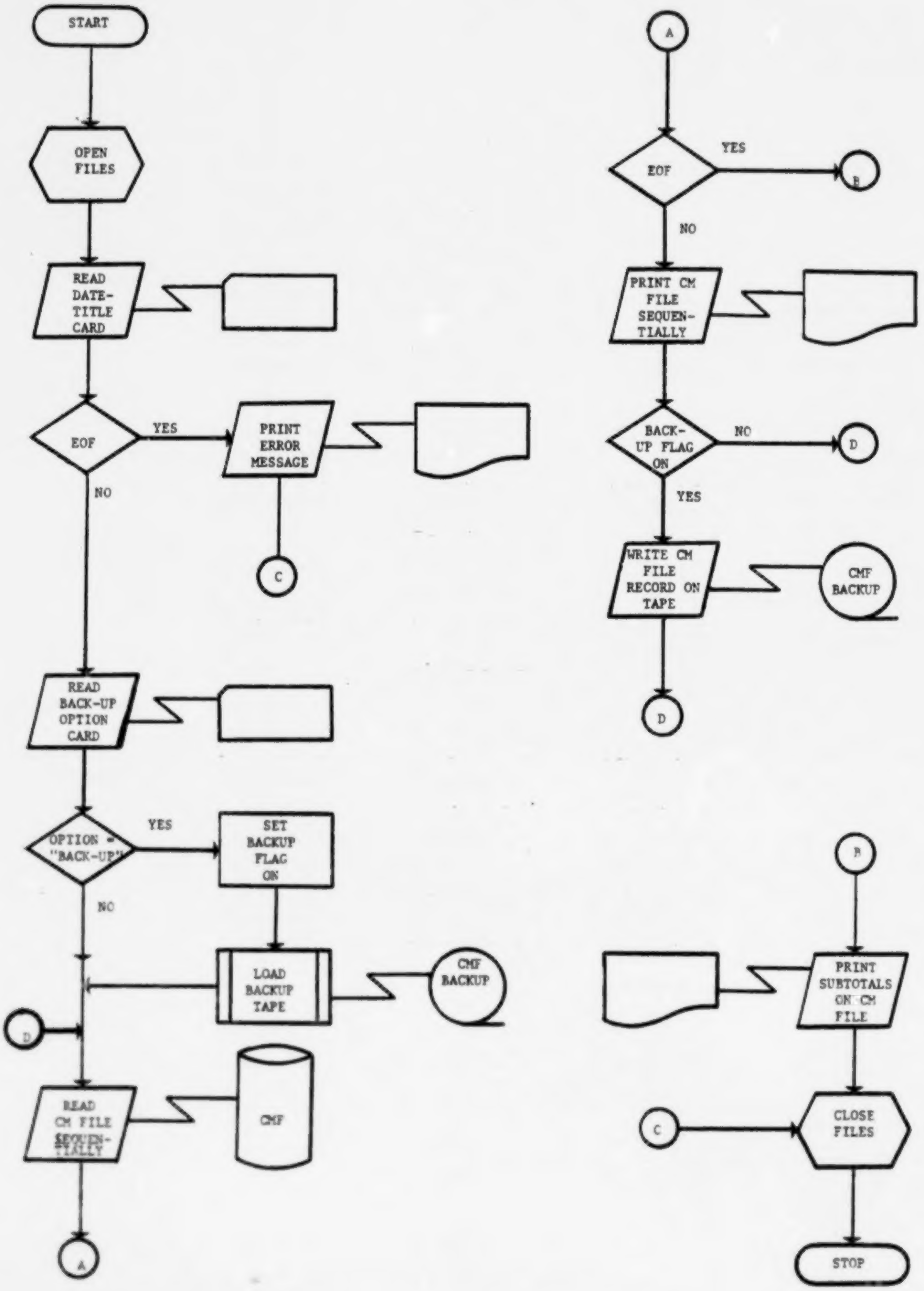
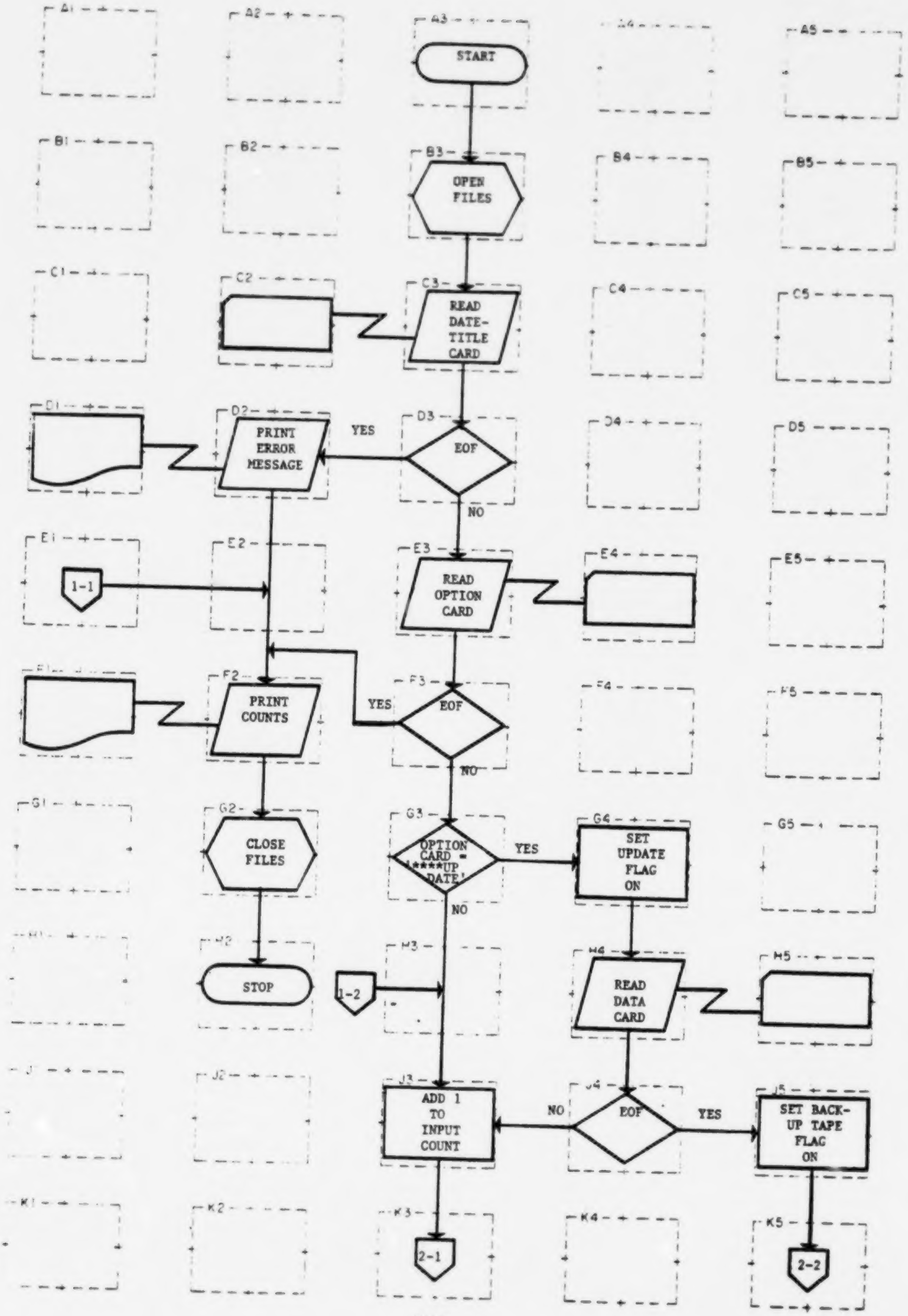

START
OPEN FILES
READ DATE-TITLE CARD
READ CURRENT RPW
READ YTD RPW
SORT CMF INTO A TEMP FILE BY COST CENTER
CMF
TEMP
B
READ TEMP FILE
CLOSE FILES
YES
EOF
NO
A
STOP
A
CALCULATE COSTS BY ZONE USING CURRENT REVENUE PRODUCING WAT
CALCULATE CURRENT UNIT COST AND PERCENTAGE BY ZONES
CALCULATE COSTS BY ZONE USING YTD REVENUE PRODUCING WATER
CALCULATE YTD UNIT COST AND PERCENTAGE BY ZONES
PRINT CURRENT UNIT COSTS & PERCENTS
PRINT YTD UNIT COSTS AND PERCENTAGES
B


START
OPEN FILES
READ DATE-TITLE CARD
EOF
YES
PRINT ERROR MESSAGE
C
NO
READ BACK-UP OPTION CARD
OPTION = "BACK-UP"
YES
SET BACKUP FLAG ON
NO
LOAD BACKUP TAPE
CMF BACKUP
D
READ CM FILE SEQUEN-TIALLY
CMF
A
A
EOF
YES
B
NO
PRINT CM FILE SEQUEN-TIALLY
BACK-UP FLAG ON
NO
D
YES
WRITE CM FILE RECORD ON TAPE
CMF BACKUP
D
B
PRINT SUBTOTALS ON CM FILE
C
CLOSE FILES
STOP


A1
A2
A3
START
A4
A5
B1
B2
B3
OPEN FILES
B4
B5
C1
C2
C3
READ DATE-TITLE CARD
C4
C5
D1
D2
PRINT ERROR MESSAGE
YES
D3
EOF
NO
D4
D5
E1
1-1
E2
E3
READ OPTION CARD
E4
E5
F1
F2
PRINT COUNTS
YES
F3
EOF
NO
F4
F5
G1
G2
CLOSE FILES
G3
OPTION CARD = '****UPDATE'
YES
NO
G4
SET UPDATE FLAG ON
G5
H1
H2
STOP
1-2
H3
H4
READ DATA CARD
H5
J1
J2
J3
ADD 1 TO INPUT COUNT
NO
J4
EOF
YES
J5
SET BACK-UP TAPE FLAG ON
K1
K2
K3
2-1
K4
K5
2-2

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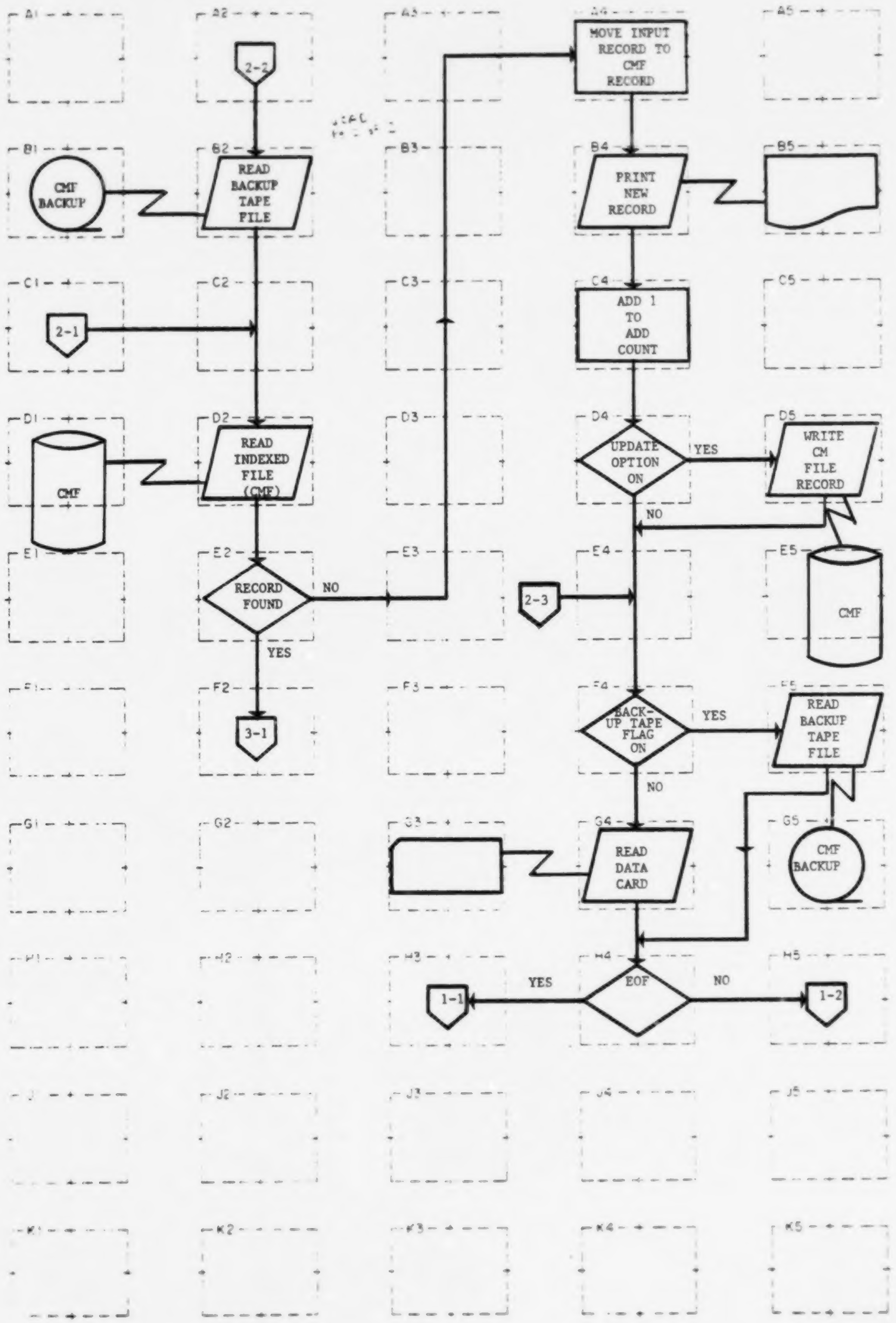
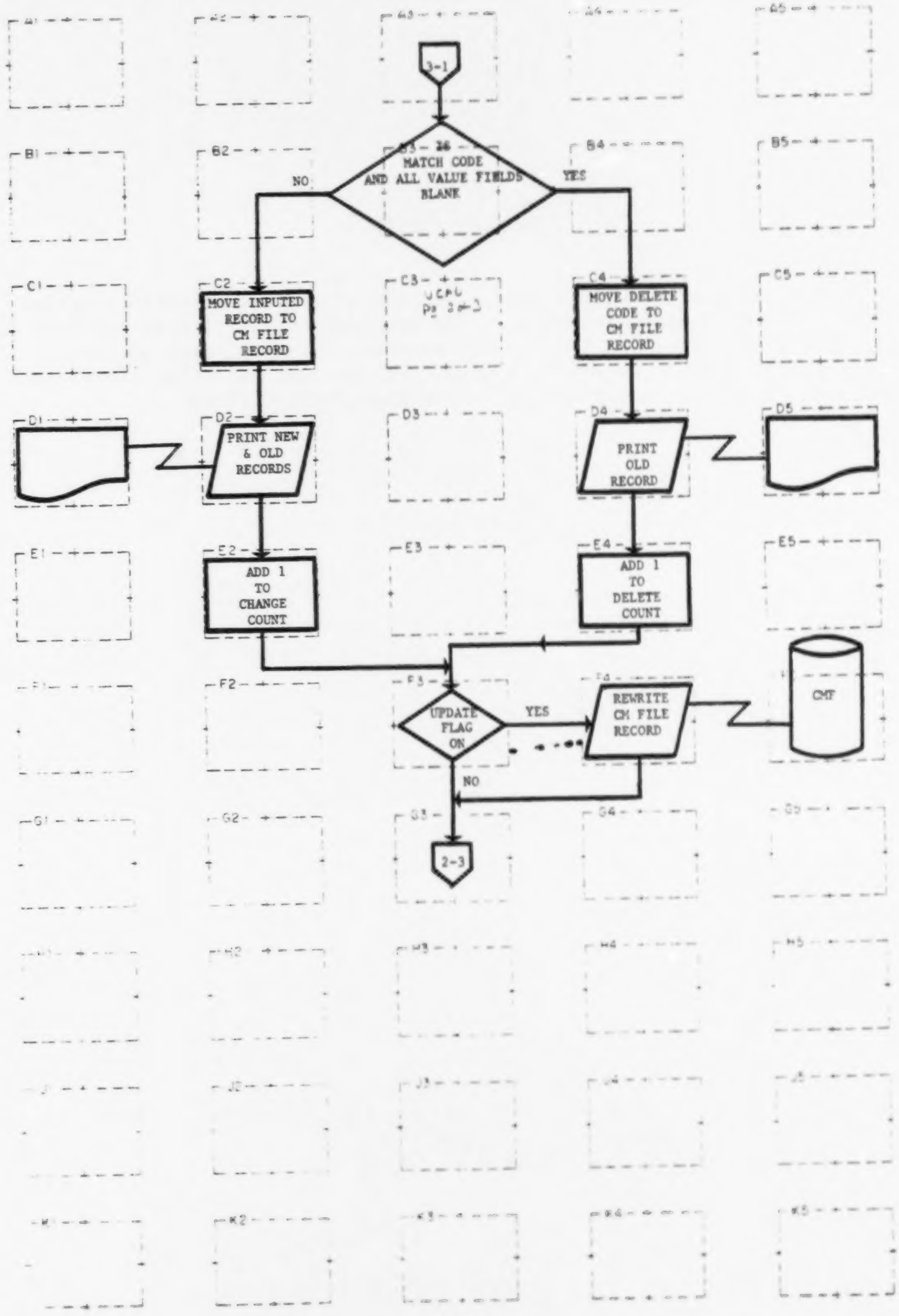

A1
A2
A3
A4
A5
2-2
MOVE INPUT RECORD TO CMF RECORD
B1
B2
B3
B4
B5
CMF BACKUP
READ BACKUP TAPE FILE
PRINT NEW RECORD
C1
C2
C3
C4
C5
2-1
ADD 1 TO ADD COUNT
D1
D2
D3
D4
D5
CMF
READ INDEXED FILE (CMF)
UPDATE OPTION ON
YES
WRITE CM FILE RECORD
NO
E1
E2
E3
E4
E5
RECORD FOUND
NO
2-3
CMF
YES
F1
F2
F3
F4
F5
3-1
BACK-UP TAPE FLAG ON
YES
READ BACKUP TAPE FILE
NO
G1
G2
G3
G4
G5
READ DATA CARD
CMF BACKUP
H1
H2
H3
H4
H5
1-1
YES
EOF
NO
1-2
J1
J2
J3
J4
J5
K1
K2
K3
K4
K5


3-1
B3-26
MATCH CODE
AND ALL VALUE FIELDS
BLANK
NO
YES
MOVE INPUTED RECORD TO CM FILE RECORD
UCPL Pg 3-3
MOVE DELETE CODE TO CM FILE RECORD
PRINT NEW & OLD RECORDS
PRINT OLD RECORD
ADD 1 TO CHANGE COUNT
ADD 1 TO DELETE COUNT
UPDATE FLAG ON
YES
REWRITE CM FILE RECORD
CMF
NO
2-3

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SECTION 5

PROGRAM LISTING

This section includes a source listing of all the computer programs used in the Cost Analysis System. The programs are written in American Standard COBOL within an IBM 370 environment, and thus, each program listing will provide an identification division, an operating environment division, a data format division, and a procedures division.

```
   PGMNAME=WUASBCCT
IDENTIFICATION DIVISION.
PROGRAM-ID. WUASBCCT.
AUTHOR. ACT SYSTEMS, INC
        SUITE 200
        807 W MORSE BLVD
        WINTER PARK, FL  32789.
DATE-WRITTEN. MAY 1977.
DATE-COMPILED.
REMARKS. THIS PROGRAM EDITS THE COST CENTER DESCRIPTION
         CARDS, FLAGS ANY DISCREPANCIES, AND BUILDS THE
         COST CENTER TABLE FILE.
ENVIRONMENT DIVISION.
CONFIGURATION SECTION.
SOURCE-COMPUTER. IBM-370.
OBJECT-COMPUTER. IBM-370.
SPECIAL-NAMES.
    C01 IS NEW-PAGE.
INPUT-OUTPUT SECTION.
FILE-CONTROL.
    SELECT CARD-IN
        ASSIGN TO UR-2540R-S-CARDIN
        ACCESS MODE IS SEQUENTIAL.
    SELECT PRINT-OUT
        ASSIGN TO UR-1403-S-PRINTOUT
        ACCESS MODE IS SEQUENTIAL.
    SELECT COST-CNTR-TABFI
        ASSIGN TO DA-3330-I-CCTABFI
        ACCESS MODE IS SEQUENTIAL
        RECORD KEY IS CC-NUMBER.
DATA DIVISION.
FILE SECTION.
FD  CARD-IN
    RECORD CONTAINS 80 CHARACTERS
    LABEL RECORDS ARE OMITTED
    DATA RECORD IS INPUT-CARD.
01  INPUT-CARD.
    05  CC-NO          PIC X(4).
    05  OVFLOW1        PIC X.
    05  CC-NAME1       PIC X(13).
    05  OVFLOW2        PIC X.
    05  CC-NAME2       PIC X(13).
    05  OVFLOW3        PIC X.
    05  FILLER         PIC X(47).
01  DATE-CARD.
    05  DATE-IN        PIC X(16).
    05  TITLE-IN       PIC X(24).
    05  FILLER         PIC X(38).
FD  PRINT-OUT
    RECORD CONTAINS 133 CHARACTERS
```

```
          LABEL RECORDS ARE OMITTED
          DATA RECORD IS PRINT-LINE.
      01  PRINT-LINE        PIC X(133).
      FD  COST-CNTR-TABFI
          BLOCK CONTAINS 8 RECORDS
          RECORD CONTAINS 30 CHARACTERS
          LABEL RECORDS ARE STANDARD
          DATA RECORD IS CC-REC.
      01  CC-REC.
          05  CC-NUMBER    PIC 9(4).
          05  CC-NAME1     PIC X(13).
          05  CC-NAME2     PIC X(13).
      WORKING-STORAGE SECTION.
      77  TITLE-1      PIC X(24).
      77  LINE-CT      PIC 9(4) COMP VALUE 0.
      77  PAGE-NO      PIC 9(4) COMP VALUE 1.
      77  MAX-LINE     PIC 99 COMP VALUE 56.
      77  CC       PIC 9 COMP.
      77  DD       PIC 9 COMP.
      77  LN       PIC 9 COMP.
      77  IC           PIC 9 COMP.
      77  LAST-2  PIC 99.
      77  LAST-3  PIC 999.
      01  LAST-CC-NO.
          05  LAST-F  PIC 9(4) COMP.
          05  LAST-S  PIC 9(4) COMP.
          05  LAST-I  PIC 9(4) COMP VALUE 0.
      01  FLAGS.
          05  BUF-FLG OCCURS 3 TIMES PIC 9.
      01  HEADING-LINE.
          05  FILLER  PIC X(51) VALUE SPACES.
          05  TITLE   PIC X(24).
          05  FILLER  PIC X(58) VALUE SPACES.
      01  DATE-PAGE-LINE.
          05  FILLER  PIC X VALUE SPACE.
          05  FILLER  PIC X(6) VALUE 'DATE: '.
          05  DATE-1  PIC X(18).
          05  FILLER  PIC X(36) VALUE SPACES.
          05  FILLER  PIC X(3) VALUE 'FOR'.
          05  FILLER PIC X(58) VALUE SPACES.
          05  FILLER  PIC X(5) VALUE 'PAGE '.
          05  PAGE-1  PIC ZZZ9.
          05  FILLER  PIC XX VALUE SPACES.
      01  TITLE-LINE.
          05  FILLER  PIC X(7) VALUE SPACES.
          05  FILLER  PIC X(8) VALUE 'FUNCTION'.
          05  FILLER  PIC X(32) VALUE SPACES.
          05  FILLER  PIC X(11) VALUE 'SUBFUNCTION'.
          05  FILLER  PIC X(29) VALUE SPACES.
          05  FILLER  PIC X(14) VALUE 'IDENTIFICATION'.
```

```
    05  FILLER  PIC X(32) VALUE SPACES.
01  DATA-OUT.
02  DATA-LINE OCCURS 2 TIMES.
    05  FILLER  PIC X.
    05  DATA-BLOCK OCCURS 3 TIMES.
        10  CC-NO        PIC X(4).
        10  FILLER       PIC XX.
        10  CC-NAME      PIC X(13).
        10  FILLER       PIC X.
        10  ERROR-MSG    PIC X(20).
    05  FILLER           PIC X(12).
PROCEDURE DIVISION.
OPEN-FILES.
    OPEN INPUT CARD-IN.
    OPEN OUTPUT PRINT-OUT, COST-CNTR-TABFI.
CLEAR-FIELDS.
    MOVE SPACES TO DATA-OUT.
    MOVE ZEROS TO FLAGS.
READ-CARDIN.
    READ CARD-IN AT END GO TO CLOSE-ROUTINE.
FILL-HEADING.
    MOVE DATE-IN TO DATE-1.
    MOVE TITLE-IN TO TITLE-1.
PRINT-HEADING.
    PERFORM BLANK-LINE.
    WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
    MOVE 'COST CENTER DESCRIPTIONS' TO TITLE.
    MOVE HEADING-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE PAGE-NO TO PAGE-1.
    MOVE DATE-PAGE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE TITLE-1 TO TITLE.
    MOVE HEADING-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    PERFORM BLANK-LINE THRU WRITE-OUT.
    MOVE TITLE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    PERFORM BLANK-LINE THRU WRITE-OUT.
START-EDIT.
    PERFORM READ-CARDIN.
EDIT-STEPS.
    MOVE 1 TO LN.
    IF CC-NO OF INPUT-CARD NOT NUMERIC
        MOVE 1 TO CC, DD
        PERFORM FULL-BUFFER UNTIL FLAGS = ZEROES
        MOVE 'NOT NUMERIC' TO ERROR-MSG (LN, CC)
        MOVE 2 TO LN
        PERFORM CHECK-OVERRUN THRU CHECK-END
        PERFORM FILL-BUFFER THRU WRITE-DISK
```

```
             GO TO START-EDIT.
         MOVE CC-NO OF INPUT-CARD TO LAST-3, CC-NUMBER.
         IF LAST-3 = 0
             MOVE 1 TO CC, DD
             PERFORM FULL-BUFFER UNTIL FLAGS = ZEROES
             MOVE CC-NO OF INPUT-CARD TO LAST-F
             PERFORM CHECK-SEQ-I THRU CHECK-END
             PERFORM FILL-BUFFER THRU WRITE-DISK
             GO TO START-EDIT.
         MOVE CC-NO OF INPUT-CARD TO LAST-2.
         IF LAST-2 = 0
             MOVE 2 TO CC, DD
             PERFORM FULL-BUFFER UNTIL FLAGS = ZEROES OR DD > 3
             MOVE CC-NO OF INPUT-CARD TO LAST-S
             PERFORM CHECK-SEQ-F THRU CHECK-END
             PERFORM FILL-BUFFER THRU WRITE-DISK
             GO TO START-EDIT.
     EDIT-END.
         MOVE 3 TO CC, DD.
         PERFORM FULL-BUFFER.
         PERFORM CHECK-SEQ-S THRU CHECK-END.
         PERFORM FILL-BUFFER THRU WRITE-DISK.
         GO TO START-EDIT.
     CHECK-SEQ-S.
         IF CC-NUMBER / 100 * 100 NOT = LAST-S
             MOVE 'NO SUBFUNCTION' TO ERROR-MSG (LN, 2).
     CHECK-SEQ-F.
         IF CC-NUMBER / 1000 * 1000 NOT = LAST-F
             MOVE 'NO FUNCTION' TO ERROR-MSG (LN, 1).
     CHECK-SEQ-I.
         IF CC-NUMBER NOT > LAST-I
             MOVE 'SEQUENCE ERROR' TO ERROR-MSG (LN, CC)
             MOVE 2 TO LN.
         MOVE CC-NUMBER TO LAST-I.
     CHECK-OVERRUN.
         IF OVFLOW1 NOT = SPACE OR OVFLOW2 NOT = SPACE
             OR OVFLOW3 NOT = SPACE
             MOVE 'FIELD OVERRUN' TO ERROR-MSG (LN, CC)
             MOVE 2 TO LN.
     CHECK-TEXT.
         IF CC-NAME1 OF INPUT-CARD = SPACES
             AND CC-NAME2 OF INPUT-CARD = SPACES
             MOVE 'NO TEXT' TO ERROR-MSG (LN, CC)
             MOVE 2 TO LN.
     CHECK-END.
         EXIT.
     FULL-BUFFER.
    * BUFFER EMPTY THEN FLAGS=0 BUFFER FULL THEN FLAGS=1
         IF BUF-FLG (DD) NOT = 0
             MOVE 0 TO IC
```

```
        PERFORM WRITE-DATA 2 TIMES
        MOVE ZEROES TO FLAGS
        PERFORM BLANK-LINE THRU WRITE-OUT
        PERFORM PAGE-OVFLOW.
    ADD 1 TO DD.
WRITE-DATA.
    ADD 1 TO IC.
    MOVE DATA-LINE (IC) TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE SPACES TO DATA-LINE (IC).
FILL-BUFFER.
    MOVE CC-NAME1 OF INPUT-CARD TO CC-NAME (1, CC).
    MOVE CC-NAME2 OF INPUT-CARD TO CC-NAME (2, CC).
    MOVE 1 TO BUF-FLG (CC).
    MOVE CC-NO OF INPUT-CARD TO CC-NO OF DATA-LINE (1, CC).
WRITE-DISK.
    IF LN NOT > 1
        MOVE CORR INPUT-CARD TO CC-REC
        WRITE CC-REC INVALID KEY
            MOVE INPUT-CARD TO PRINT-LINE
            PERFORM WRITE-OUT
            PERFORM BLANK-LINE THRU WRITE-OUT.
BLANK-LINE.
    MOVE SPACES TO PRINT-LINE.
WRITE-OUT.
    WRITE PRINT-LINE BEFORE ADVANCING 1.
    ADD 1 TO LINE-CT.
PAGE-OVFLOW.
    IF LINE-CT > MAX-LINE
        ADD 1 TO PAGE-NO
        MOVE 0 TO LINE-CT
        PERFORM PRINT-HEADING.
CLOSE-ROUTINE.
    IF FLAGS > 0
        MOVE 0 TO IC
        PERFORM WRITE-DATA 2 TIMES.
CLOSE-FILES.
    CLOSE CARD-IN, PRINT-OUT, COST-CNTR-TABFI.
PROGRAM-END.
    STOP RUN.
    PGMNAME=WUASBSAT
 IDENTIFICATION DIVISION.
 PROGRAM-ID. WUASBSAT.
 AUTHOR. ACT SYSTEMS, INC
         SUITE 200
         807 W MORSE BLVD
         WINTER PARK, FL 32789.
 DATE-WRITTEN. JUNE 1977.
 DATE-COMPILED.
 REMARKS. THIS PROGRAM EDITS THE SPECIAL ACCOUNT DESCRIPTION
          CARDS, FLAGS ANY DISCREPANCIES, AND BUILDS THE SPECIAL
          ACCOUNT SEARCH TABLE FILE.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 SOURCE-COMPUTER. IBM-370.
 OBJECT-COMPUTER. IBM-370.
 SPECIAL-NAMES.
     C01 IS NEW-PAGE.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
     SELECT CARD-IN
         ASSIGN TO UR-2540R-S-CARDIN
         ACCESS MODE IS SEQUENTIAL.
     SELECT PRINT-OUT
         ASSIGN TO UR-1403-S-PRINTOUT
         ACCESS MODE IS SEQUENTIAL.
     SELECT SPECIAL-ACCT-TABFI
         ASSIGN TO UT-3330-S-SATABFI
         ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
 FILE SECTION.
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     05  SA-NO           PIC XX.
     05  SA-OVFLOW1      PIC X.
     05  SA-NAME         PIC X(20).
     05  SA-OVFLOW2      PIC X.
     05  FILLER          PIC X(56).
 01  DATE-CARD.
     05  DATE-IN         PIC X(18).
     05  TITLE-IN        PIC X(24).
     05  FILLER          PIC X(38).
 FD  PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
 01  PRINT-LINE          PIC X(133).
```

```
FD  SPECIAL-ACCT-TABLE
    BLOCK CONTAINS 0 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS SPEC-ACCT-REC.
01  SPEC-ACCT-REC.
    05  RECORD-COUNT.
        10  NO-OF-RECS  PIC 9(4).
        10  FILLER      PIC X(18).
    05  SPEC-ACCT OCCURS 1 TO 99 TIMES
        DEPENDING ON NO-OF-RECS
        ASCENDING KEY IS SA-NO INDEXED BY IA.
        10  SA-NO       PIC XX.
        10  SA-NAME     PIC X(20).
WORKING-STORAGE SECTION.
77  LAST-SA     PIC 99 VALUE 0.
77  LINE-CT     PIC 9(4) COMP VALUE 0.
77  PAGE-NO     PIC 9(4) COMP VALUE 1.
77  MAX-LINE    PIC 99 COMP VALUE 56.
77  IE      PIC 9 COMP.
01  HEADING-LINE.
    05  FILLER  PIC X(52) VALUE SPACES.
    05  FILLER  PIC X(28) VALUE 'SPECIAL ACCOUNT DESCRIPTIONS'.
    05  FILLER  PIC X(53) VALUE SPACES.
01  DATE-LINE.
    05  FILLER  PIC X VALUE SPACE.
    05  FILLER  PIC X(6) VALUE 'DATE: '.
    05  DATE-1  PIC X(18).
    05  FILLER  PIC X(40) VALUE SPACES.
    05  FILLER  PIC X(3) VALUE 'FOR'.
    05  FILLER  PIC X(53) VALUE SPACES.
    05  FILLER  PIC X(5) VALUE 'PAGE '.
    05  PAGE-1  PIC ZZZ9.
    05  FILLER  PIC XX VALUE SPACES.
01  TITLE-LINE.
    05  FILLER  PIC X(54) VALUE SPACES.
    05  TITLE   PIC X(24).
    05  FILLER  PIC X(55) VALUE SPACES.
01  DATA-OUT.
    05  FILLER      PIC X(41).
    05  SA-NO       PIC XX.
    05  FILLER      PIC X(8).
    05  SA-NAME     PIC X(20).
    05  FILLER      PIC X(5).
    05  SA-ERROR1   PIC X(20).
    05  FILLER      PIC X(5).
    05  SA-ERROR2   PIC X(20).
    05  FILLER      PIC X(12).
01  ERR-FIELDS.
    05  ERROR-FLD OCCURS 2 TIMES PIC X(20).
PROCEDURE DIVISION.
```

```
OPEN-FILES.
    OPEN INPUT CARD-IN.
    OPEN OUTPUT PRINT-OUT, SPECIAL-ACCT-TABFI.
CLEAR-FIELDS.
    MOVE SPACES TO DATA-OUT.
    MOVE SPACES TO ERR-FIELDS.
    MOVE ZERO TO NO-OF-RECS.
    SET IA TO 1.
READ-CARDIN.
    READ CARD-IN AT END GO TO CLOSE-ROUTINE.
FILL-HEADING.
    MOVE DATE-IN TO DATE-1.
    MOVE TITLE-IN TO TITLE.
PRINT-HEADING.
    PERFORM BLANK-LINE.
    WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
    MOVE HEADING-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE PAGE-NO TO PAGE-1.
    MOVE DATE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE TITLE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
START-EDIT.
    PERFORM READ-CARDIN.
    IF SA-NO OF INPUT-CARD = '**'
        PERFORM BLANK-LINE THRU WRITE-OUT
        MOVE SA-NAME OF INPUT-CARD TO SA-NAME OF DATA-OUT
        MOVE DATA-OUT TO PRINT-LINE
        PERFORM WRITE-OUT
        PERFORM BLANK-LINE THRU WRITE-OUT
        GO TO START-EDIT.
    MOVE 1 TO IE.
ERROR-CHECKS.
    IF SA-NO OF INPUT-CARD IS NOT NUMERIC
        MOVE 'NOT NUMERIC' TO ERROR-FLD (IE)
        MOVE 2 TO IE.
    IF  SA-NAME OF INPUT-CARD = SPACES
        MOVE 'NO TEXT' TO ERROR-FLD (IE)
        MOVE 2 TO IE.
    IF  SA-OVFLOW1 NOT = SPACE OR SA-OVFLOW2 NOT = SPACE
        MOVE 'FIELD OVERRUN' TO ERROR-FLD (IE)
        MOVE 2 TO IE.
    IF SA-NO OF INPUT-CARD NOT > LAST-SA
        AND SA-NO OF INPUT-CARD NOT = ZEROS
        MOVE 'SEQUENCE ERROR' TO ERROR-FLD (IE)
        MOVE 2 TO IE.
    IF IE < 2
        PERFORM FILL-DATA.
    MOVE SA-NO OF INPUT-CARD TO LAST-SA.
```

```
WRITE-DATA.
    MOVE CORR INPUT-CARD TO DATA-OUT.
    MOVE ERROR-FLD (1) TO SA-ERROR1.
    MOVE ERROR-FLD (2) TO SA-ERROR2.
    MOVE DATA-OUT TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE SPACES TO ERR-FIELDS, DATA-OUT.
    GO TO START-EDIT.
FILL-DATA.
    MOVE CORR INPUT-CARD TO SPEC-ACCT (IA).
    ADD 1 TO NO-OF-RECS.
    SET IA UP BY 1.
BLANK-LINE.
    MOVE SPACES TO PRINT-LINE.
WRITE-OUT.
    WRITE PRINT-LINE BEFORE ADVANCING 1.
    ADD 1 TO LINE-CT.
    IF LINE-CT > MAX-LINE
        ADD 1 TO PAGE-NO
        MOVE 0 TO LINE-CT
        PERFORM PRINT-HEADING.
CLOSE-ROUTINE.
    WRITE SPEC-ACCT-REC.
    CLOSE CARD-IN, PRINT-OUT, SPECIAL-ACCT-TABFI.
PROGRAM-END.
    STOP RUN.
```

```
     PGMNAME=WUASBFAT
 IDENTIFICATION DIVISION.
 PROGRAM-ID. WUASBFAT.
 AUTHOR. ACT SYSTEMS, INC
         SUITE 200
         807 W MORSE BLVD
         WINTER PARK, FL 32789.
 DATE-WRITTEN. JUNE 1977.
 DATE-COMPILED.
 REMARKS. THIS PROGRAM EDITS THE FINANCIAL ACCOUNT DESCRIPTION
         CARDS, FLAGS ANY DISCREPANCIES, AND BUILDS THE FINANCIAL
         ACCOUNT TABLE FILE.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 SOURCE-COMPUTER. IBM-370.
 OBJECT-COMPUTER. IBM-370.
 SPECIAL-NAMES.
     C01 IS NEW-PAGE.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
     SELECT CARD-IN
         ASSIGN TO UR-2540R-S-CARDIN
         ACCESS MODE IS SEQUENTIAL.
     SELECT FILE-SORT
         ASSIGN TO UT-3330-S-FILESORT
         ACCESS MODE IS SEQUENTIAL.
     SELECT SORTED-FILE
         ASSIGN TO UT-3330-S-SORTEDFI
         ACCESS MODE IS SEQUENTIAL.
     SELECT SPECIAL-ACCT-TABFI
         ASSIGN TO UT-3330-S-SATABFI
         ACCESS MODE IS SEQUENTIAL.
     SELECT PRINT-OUT
         ASSIGN TO UR-1403-S-PRINTOUT
         ACCESS MODE IS SEQUENTIAL.
     SELECT  FINANCIAL-ACCT-TABFI
         ASSIGN TO DA-3330-I-FATABFI
         ACCESS MODE IS SEQUENTIAL
         RECORD KEY IS FA-NUMBER.
 DATA DIVISION.
 FILE SECTION.
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-RECS.
 01  INPUT-RECS            PIC X(80).
 01  DATE-CARD.
     05  DATE-IN      PIC X(18).
     05  TITLE-IN     PIC X(24).
     05  FILLER       PIC X(38).
```

```
SD   FILE-SORT
     RECORD CONTAINS 80 CHARACTERS
     DATA RECORD IS SORT-INPUT.
01   SORT-INPUT.
     05  SORT-FIRST-10    PIC X(10).
     05  FILLER           PIC X(70).
FD   SORTED-FILE
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS INPUT-CARD.
01   INPUT-CARD.
     05  FA-NO         PIC X(10).
     05  OVFLOW1       PIC X.
     05  FA-NAME1      PIC X(20).
     05  OVFLOW2       PIC X.
     05  FA-NAME2      PIC X(20).
     05  OVFLOW3       PIC X.
     05  FN-TITLE      PIC XX.
     05  OVFLOW4       PIC X.
     05  GA-TITLE      PIC XX.
     05  OVFLOW5       PIC X.
     05  FA-INTERNAL PIC X(4).
     05  OVFLOW6       PIC X.
     05  FILLER        PIC X(16).
FD   PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
01   PRINT-LINE        PIC X(133).
FD   FINANCIAL-ACCT-TABF1
     BLOCK CONTAINS 8 RECORDS
     RECORD CONTAINS 58 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS FA-REC.
01   FA-REC.
     05  FA-NUMBER   PIC X(10).
     05  FA-NAME1    PIC X(20).
     05  FA-NAME2    PIC X(20).
     05  FN-TITLE    PIC XX.
     05  GA-TITLE    PIC XX.
     05  FA-INTERNAL PIC X(4).
FD   SPECIAL-ACCT-TABFI
     BLOCK CONTAINS 0 RECORDS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS SPEC-ACCT-REC.
01   SPEC-ACCT-REC.
     05  RECORD-COUNT.
         10  NO-OF-RECS  PIC 9(4).
         10  FILLER      PIC X(18).
     05  SPEC-ACCT OCCURS 1 TO 99 TIMES
```

```
                DEPENDING ON NO-OF-RECS
                ASCENDING KEY IS SA-NO INDEXED BY IA.
                10  SA-NO        PIC XX.
                10  SA-NAME      PIC X(20).
       WORKING-STORAGE SECTION.
        77  IFA      PIC 9 COMP.
        77  ISA      PIC 9 COMP.
        77  IND      PIC 9 COMP.
        77  LAST-FA      PIC X(10) VALUE SPACES.
        77  LINE-CT      PIC 9(4) COMP VALUE 0.
        77  PAGE-NO      PIC 9(4) COMP VALUE 1.
        77  MAX-LINE     PIC 99 COMP VALUE 56.
        77  SEARCH-NO    PIC XX.
        01  COLUMN-HEADING.
            05  FILLER PIC X(21) VALUE SPACES.
            05  FILLER PIC X(9)  VALUE 'ACCOUNT #'.
            05  FILLER PIC X(10) VALUE SPACES.
            05  FILLER PIC X(12) VALUE 'ACCOUNT NAME'.
            05  FILLER PIC X(34) VALUE SPACES.
            05  FILLER PIC X(18) VALUE 'FUND/ACCOUNT TITLE'.
            05  FILLER PIC X(7) VALUE SPACES.
            05  FILLER PIC X VALUE '#'.
            05  FILLER PIC X(21) VALUE SPACES.
        01  DATE-LINE.
            05  FILLER   PIC X VALUE SPACE.
            05  FILLER   PIC X(6) VALUE 'DATE: '.
            05  DATE-1   PIC X(18).
            05  FILLER   PIC X(40) VALUE SPACES.
            05  FILLER   PIC X(3) VALUE 'FOR'.
            05  FILLER   PIC X(53) VALUE SPACES.
            05  FILLER   PIC X(5) VALUE 'PAGE'.
            05  PAGE-1   PIC ZZZ9.
            05  FILLER   PIC XX VALUE SPACES.
        01  HEADING-LINE.
            05  FILLER   PIC X(51) VALUE SPACES.
            05  FILLER   PIC X(30) VALUE 'FINANCIAL ACCOUNT DESCRIPTIONS'.
            05  FILLER   PIC X(52) VALUE SPACES.
        01  TITLE-LINE.
            05  FILLER   PIC X(54) VALUE SPACES.
            05  TITLE    PIC X(24).
            05  FILLER   PIC X(55) VALUE SPACES.
        01  DATA-OUT.
            05  DATA-LINE OCCURS 2 TIMES.
                10  FILLER   PIC X(21).
                10  FA-NO.
                    15  FA-NO-1  PIC XX.
                    15  FILLER PIC X.
                    15  FA-NO-2  PIC XX.
                    15  FILLER PIC X.
                    15  FA-NO-3  PIC X(4).
        10  FILLER  PIC X(5).
        10  FA-NAME PIC X(20).
        10  FILLER  PIC X(5).
        10  FA-ERR  PIC X(20).
        10  FILLER  PIC X(5).
        10  SA-NAME PIC X(20).
        10  FILLER  PIC X(5).
        10  SA-NO   PIC XX.
        10  FILLER  PIC X(5).
        10  SA-ERR  PIC X(10).
        10  FILLER  PIC X(5).
PROCEDURE DIVISION.
OPEN-FILES.
    OPEN INPUT CARD-IN, SPECIAL-ACCT-TABFI.
    OPEN OUTPUT PRINT-OUT, FINANCIAL-ACCT-TABFI.
READ-CARDIN.
    READ CARD-IN AT END GO TO CLOSE-ROUTINE.
FILL-HEADING.
    MOVE DATE-IN TO DATE-1.
    MOVE TITLE-IN TO TITLE.
SORT-ROUTINE.
    OPEN OUTPUT SORTED-FILE.
    SORT FILE-SORT ON ASCENDING KEY
        SORT-FIRST-10
    INPUT PROCEDURE READ-SORT-INPUT THRU
        READ-SORT-INPUT-END
    OUTPUT PROCEDURE WRITE-SORT-OUTPUT THRU
        WRITE-SORT-OUTPUT-END.
CLOSE-SORT-FILES.
    CLOSE SORTED-FILE, CARD-IN.
    OPEN INPUT SORTED-FILE.
PRINT-HEADING.
    PERFORM BLANK-LINE.
    WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
    MOVE HEADING-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE PAGE-NO TO PAGE-1.
    MOVE DATE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE TITLE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    PERFORM BLANK-LINE THRU WRITE-OUT.
    MOVE COLUMN-HEADING TO PRINT-LINE.
    PERFORM WRITE-OUT.
    PERFORM BLANK-LINE THRU WRITE-OUT.
READ-SPECIAL-ACCTS.
    READ SPECIAL-ACCT-TABFI AT END
        MOVE 'SPECIAL-ACCT-TABFI CONTAINS NO DATA' TO PRINT-LINE
        PERFORM WRITE-OUT
        GO TO CLOSE-ROUTINE.
```

```
 START-EDIT.
     READ SORTED-FILE AT END GO TO CLOSE-ROUTINE.
     MOVE 1 TO IFA, ISA.
     MOVE SPACES TO DATA-OUT.
 CHECK-ACCT-NO.
     IF FA-NO OF INPUT-CARD = SPACES
          MOVE 'BLANK ACCOUNT #' TO FA-ERR (IFA)
          MOVE 2 TO IFA.
     IF FA-NO OF INPUT-CARD NOT > LAST-FA
          MOVE 'SEQUENCE ERROR' TO FA-ERR (IFA)
          MOVE 2 TO IFA.
     MOVE FA-NO OF INPUT-CARD TO LAST-FA, FA-NO OF DATA-LINE (1),
          FA-NUMBER.
 CHECK-ACCT-NAME.
     IF FA-NAME1 OF INPUT-CARD = SPACES AND
          FA-NAME2 OF INPUT-CARD = SPACES
               MOVE 'NO TEXT' TO FA-ERR (IFA)
               MOVE 2 TO IFA.
     MOVE FA-NAME1 OF INPUT-CARD TO FA-NAME (1).
     MOVE FA-NAME2 OF INPUT-CARD TO FA-NAME (2).
 CHECK-OVFLOW.
     IF OVFLOW1 NOT = SPACE OR OVFLOW2 NOT = SPACE OR
          OVFLOW3 NOT = SPACE OR OVFLOW4 NOT = SPACE OR
          OVFLOW5 NOT = SPACE OR OVFLOW6 NOT = SPACE
               MOVE 'FIELD OVERFUN' TO FA-ERR (IFA)
               MOVE 2 TO IFA.
 CHECK-INTERNAL-ACCT.
     EXAMINE FA-INTERNAL OF INPUT-CARD REPLACING ALL ' ' BY 0.
     IF FA-INTERNAL OF INPUT-CARD NOT NUMERIC
          MOVE 'NOT NUMERIC' TO FA-ERR (IFA)
          MOVE 2 TO IFA.
     MOVE FA-INTERNAL OF INPUT-CARD TO FA-NO-3 (2).
 SEARCH-SPEC-ACCTS.
     MOVE 1 TO IND.
     MOVE FN-TITLE OF INPUT-CARD TO SEARCH-NO, FA-NO-1 (2).
     PERFORM SEARCH-ROUTINE.
     MOVE 2 TO IND.
     MOVE GA-TITLE OF INPUT-CARD TO SEARCH-NO, FA-NO-2 (2).
     PERFORM SEARCH-ROUTINE.
 CHECK-ERRORS.
     IF IFA < 2 AND ISA < 2
          PERFORM FILL-DATA.
     MOVE 1 TO IND.
     PERFORM WRITE-DATA 2 TIMES.
     PERFORM BLANK-LINE THRU WRITE-OUT.
     PERFORM PAGE-OVFLOW.
     GO TO START-EDIT.
 SEARCH-ROUTINE.
     SET IA TO 1.
     SEARCH ALL SPEC-ACCT AT END
```

```
         MOVE 'NO TITLE FOUND' TO SA-NAME OF DATA-LINE (IND)
         MOVE 2 TO ISA
         MOVE ALL '*' TO SA-ERR (IND)
         MOVE SEARCH-NO TO SA-NO OF DATA-LINE (IND)
     WHEN SA-NO OF SPEC-ACCT (IA) = SEARCH-NO
         MOVE CORR SPEC-ACCT (IA) TO DATA-LINE (IND).
 WRITE-DATA.
     MOVE DATA-LINE (IND) TO PRINT-LINE.
     PERFORM WRITE-OUT.
     ADD 1 TO IND.
 FILL-DATA.
     MOVE CORR INPUT-CARD TO FA-REC.
     WRITE FA-REC INVALID KEY
         MOVE 'INVALID KEY' TO FA-ERR (IFA).
 BLANK-LINE.
     MOVE SPACES TO PRINT-LINE.
 WRITE-OUT.
     WRITE PRINT-LINE BEFORE ADVANCING 1.
     ADD 1 TO LINE-CT.
 PAGE-OVFLOW.
     IF LINE-CT > MAX-LINE
         ADD 1 TO PAGE-NO
         MOVE 0 TO LINE-CT
         PERFORM PRINT-HEADING.
*
*    INPUT AND OUTPUT SORT ROUTINES
*
 READ-SORT-INPUT.
     READ CARD-IN AT END
         GO TO READ-SORT-INPUT-END.
     RELEASE SORT-INPUT FROM INPUT-RECS.
     GO TO READ-SORT-INPUT.
 READ-SORT-INPUT-END.
     EXIT.
 WRITE-SORT-OUTPUT.
     RETURN FILE-SORT RECORD INTO INPUT-CARD AT END
         GO TO WRITE-SORT-OUTPUT-END.
     WRITE INPUT-CARD.
     GO TO WRITE-SORT-OUTPUT.
 WRITE-SORT-OUTPUT-END.
     EXIT.
*
 CLOSE-ROUTINE.
     CLOSE CARD-IN, PRINT-OUT, SPECIAL-ACCT-TABFI, SORTED-FILE,
         FINANCIAL-ACCT-TABFI.
 PROGRAM-END.
     STOP RUN.
```

```
    PGMNAME=WUASBCRF
       DD  *
IDENTIFICATION DIVISION.
PROGRAM-ID. WUASBCRF.
AUTHOR. ACT SYSTEMS, INC
        SUITE 200
        807 W MORSE BLVD
        WINTER PARK, FL 32789.
DATE-WRITTEN. SEPTEMBER 1977.
DATE-COMPILED.
REMARKS. THIS PROGRAM BUILDS A CROSS REFERENCE FILE USED TO BUILD
         THE COST MATRIX FILE AND FOR COST ALLOCATION.
ENVIRONMENT DIVISION.
CONFIGURATION SECTION.
SOURCE-COMPUTER. IBM-370.
OBJECT-COMPUTER. IBM-370.
SPECIAL-NAMES.
    C01 IS NEW-PAGE.
INPUT-OUTPUT SECTION.
FILE-CONTROL.
    SELECT CARD-IN
        ASSIGN TO UR-2540R-S-CARDIN
        ACCESS MODE IS SEQUENTIAL.
    SELECT  FILE-SORT
        ASSIGN TO UT-3330-S-FILESORT
        ACCESS MODE IS SEQUENTIAL.
    SELECT SORTED-FILE
        ASSIGN TO UT-333-S-SORTEDFI
        ACCESS MODE IS SEQUENTIAL.
    SELECT CROSS-REF-FILE
        ASSIGN TO DA-3330-I-CRTABFI
        ACCESS MODE IS SEQUENTIAL
        RECORD KEY IS ACCT-NO.
    SELECT PRINT-OUT
        ASSIGN TO UR-1403-S-PRINTOUT
        ACCESS MODE IS SEQUENTIAL.
DATA DIVISION.
FILE SECTION.
FD  CARD-IN
    RECORD CONTAINS 80 CHARACTERS
    LABEL RECORDS ARE OMITTED
    DATA RECORDS ARE INPUT-CARD, DATE-CARD.
01  INPUT-CARD.
    05  CODE-NO      PIC X.
    05  FILLER       PIC X(79).
01  DATE-CARD.
    05  DATE-IN      PIC X(18).
    05  TITLE-IN     PIC X(24).
    05  FILLER       PIC X(38).
SD  FILE-SORT
```

```
    RECORD CONTAINS 80 CHARACTERS
    DATA RECORD IS SORT-INPUT.
01  SORT-INPUT.
    05  SORT-CODE   PIC X.
    05  FILLER      PIC X.
    05  SORT-FA-NO  PIC X(10).
    05  FILLER      PIC X(68).
FD  SORTED-FILE
    RECORD CONTAINS 80 CHARACTERS
    BLOCK CONTAINS 5 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORDS ARE INPUT-REC, INPUT-1, INPUT-2.
01  INPUT-REC.
    05  FILLER PIC X(80).
01  INPUT-1.
    05  CODE-NO PIC X.
    05  FILLER  PIC X.
    05  FA-NO   PIC X(10).
    05  C-ALLOC PIC X.
    05  FILLER  PIC X.
    05  C-CAT-BLOCK.
        10  C-CAT OCCURS 2 TIMES PIC XX.
    05  FILLER  PIC XX.
    05  C-CNTR-BLK OCCURS 7 TIMES.
        10  C-CNTR      PIC X(4).
        10  MATCH-NO    PIC X(4).
    05  FILLER  PIC X(4).
01  INPUT-2.
    05  CODE-NO PIC X.
    05  FILLER  PIC X.
    05  FA-NO   PIC X(10).
    05  C-CNTR-BLK OCCURS 8 TIMES.
        10  C-CNTR      PIC X(4).
        10  MATCH-NO    PIC X(4).
FD  CROSS-REF-FILE
    RECORD CONTAINS 265 CHARACTERS
    BLOCK CONTAINS 4 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS CR-REC.
01  CR-REC.
    05  ACCT-NO PIC X(10).
    05  C-ALLOC PIC X.
    05  C-CATS.
        10  C-CAT OCCURS 2 TIMES PIC XX.
    05  NO-CC   PIC 99.
    05  C-CNTR-BLK  OCCURS 31 TIMES.
        10  C-CNTR      PIC X(4).
        10  MATCH-NO    PIC X(4).
FD  PRINT-OUT
    RECORD CONTAINS 133 CHARACTERS
```

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           LABEL RECORDS ARE OMITTED
           DATA RECORD IS PRINT-LINE.
       01  PRINT-LINE  PIC X(133).
       WORKING-STORAGE SECTION.
       77  LINE-CT      PIC 9(4) COMP VALUE 0.
       77  PAGE-NO      PIC 9(4) COMP VALUE 1.
       77  MAX-LINE     PIC 99 COMP VALUE 56.
       77  I            PIC 9 COMP.
       77  IC           PIC 99 COMP.
       77  IR           PIC 9 COMP.
       77  ERR-HOLD     PIC X.
       77  J            PIC 9 COMP.
       77  IE           PIC 9 COMP.
       77  CODE-HOLD    PIC 9 COMP.
       01  ACCT-COUNTERS.
           05  STL-ACCTS    PIC 9(6) COMP VALUE 0.
           05  TTL-ACCTS    PIC 9(6) COMP VALUE 0.
           05  STL-GOOD     PIC 9(6) COMP VALUE 0.
           05  TTL-GOOD     PIC 9(6) COMP VALUE 0.
       01  ACCT-LINE.
           05  FILLER  PIC X VALUE SPACE.
           05  TEXT-1  PIC X(4) VALUE 'PAGE'.
           05  FILLER  PIC X(11) VALUE ' TOTALS    '.
           05  FILLER PIC X(4) VALUE 'ALL '.
           05  ALL-ACCTS   PIC Z(5)9.
           05  FILLER  PIC XX VALUE SPACES.
           05  FILLER  PIC X(5) VALUE 'GOOD '.
           05  GOOD-ACCTS  PIC Z(5)9.
           05  FILLER PIC X(94) VALUE SPACES.
       01  SORT-ERR-LINE.
           05  FILLER       PIC X VALUE SPACE.
           05  CARD-FLD     PIC X(80).
           05  FILLER       PIC X(5) VALUE SPACES.
           05  FILLER       PIC X(15) VALUE 'SORT CODE ERROR'.
           05  FILLER       PIC X(32) VALUE SPACES.
       01  HEADING-LINE.
           05  FILLER  PIC X(54) VALUE SPACES.
       05  FILLER  PIC X(26) VALUE 'CROSS REFERENCE FILE INPUT'.
           05  FILLER  PIC X(53) VALUE SPACES.
       01  DATE-LINE.
           05  FILLER  PIC X VALUE SPACE.
           05  FILLER PIC X(6) VALUE 'DATE: '.
               05  DATE-1  PIC X(18).
           05  FILLER  PIC X(40) VALUE SPACES.
           05  FILLER  PIC X(3) VALUE 'FOR'.
           05  FILLER  PIC X(53) VALUE SPACES.
           05  FILLER  PIC X(4) VALUE 'PAGE'.
           05  PAGE-1  PIC ZZZ9.
           05  FILLER  PIC X(4) VALUE SPACES.
       01  TITLE-LINE.
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        05  FILLER  PIC X(54) VALUE SPACES.
        05  TITLE   PIC X(24).
        05  FILLER  PIC X(55) VALUE SPACES.
  01  COL-HEADING-1.
        05  FILLER  PIC X VALUE SPACE.
        05  FILLER  PIC X(30) VALUE 'FINANCIAL  CATEGORY       COST'.
        05  FILLER  PIC X(26) VALUE '           COST    / MATCH'.
        05  FILLER  PIC X(76) VALUE SPACES.
  01  COL-HEADING-2.
        05  FILLER  PIC XX VALUE SPACES.
        05  FILLER  PIC X(22) VALUE 'ACCOUNT  NON-L LABOR  '.
        05  FILLER  PIC X(26) VALUE 'ALLOCATION   #   CENTERS /'.
        05  FILLER  PIC X(6) VALUE '  CODE'.
        05  FILLER  PIC X(71) VALUE SPACES.
        05  FILLER PIC X(6) VALUE 'ERRORS'.
  01  DATA-OUT.
        05  DATA-LINE OCCURS 4 TIMES.
            10  FILLER  PIC X.
            10  FA-NO   PIC X(10).
            10  C-CAT-BLK OCCURS 2 TIMES.
                15  FILLER  PIC XX.
                15  C-CAT   PIC XX.
            10  FILLER  PIC X(9).
            10  C-ALLOC PIC X.
            10  FILLER  PIC X(7).
            10  NO-CC   PIC Z9.
            10  FILLER  PIC XX.
                    10  CC-MC-BLK OCCURS 8 TIMES.
                15  FILLER  PIC XX.
                15  CC-NO   PIC X(4).
                15  DELIM   PIC X.
                15  MATCH   PIC X(4).
            10  FILLER  PIC X.
            10  ERRS.
                15  ERR-NO OCCURS 4 TIMES PIC X.
PROCEDURE DIVISION.
OPEN-FILES.
    OPEN INPUT CARD-IN.
    OPEN OUTPUT PRINT-OUT, CROSS-REF-FILE, SORTED-FILE.
READ-CARDIN.
    READ CARD-IN AT END GO TO CLOSE-FILES.
FILL-HEADING.
    MOVE DATE-IN TO DATE-1.
    MOVE TITLE-IN TO TITLE.
SORT-ROUTINE.
    SORT FILE-SORT ON ASCENDING KEY
        SORT-FA-NO
        SORT-CODE
    INPUT PROCEDURE READ-SORT-INPUT THRU
        READ-SORT-INPUT-END
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```
             OUTPUT PROCEDURE WRITE-SORT-OUTPUT THRU
                 WRITE-SORT-OUTPUT-END.
         CLOSE-SORT-FILES.
             CLOSE SORTED-FILE, CARD-IN.
             OPEN INPUT SORTED-FILE.
         PRINT-HEADING.
             PERFORM BLANK-LINE.
             WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
             MOVE HEADING-LINE TO PRINT-LINE.
             PERFORM WRITE-OUT.
             MOVE PAGE-NO TO PAGE-1.
             MOVE DATE-LINE TO PRINT-LINE.
             PERFORM WRITE-OUT.
             MOVE TITLE-LINE TO PRINT-LINE.
             PERFORM WRITE-OUT.
             PERFORM BLANK-LINE THRU WRITE-OUT.
             MOVE COL-HEADING-1 TO PRINT-LINE.
             PERFORM WRITE-OUT.
             MOVE COL-HEADING-2 TO PRINT-LINE.
             PERFORM WRITE-OUT.
             PERFORM BLANK-LINE THRU WRITE-OUT.
         START-EDIT.
             MOVE SPACES TO DATA-OUT, CR-REC.
             MOVE 0 TO CODE-HOLD.
         READ-SORTED-FILE.
             MOVE 0 TO IE.
             READ SORTED-FILE AT END GO TO CLOSE-ROUTINE.
             MOVE CODE-NO OF INPUT-1 TO IR.
             IF IR NOT > CODE-HOLD
                 PERFORM WRITE-DISK
                 PERFORM WRITE-DATA VARYING I FROM 1 BY 1
                     UNTIL I > 4 OR DATA-LINE (I) = SPACES
                 PERFORM BLANK-LINE THRU CHECK-OVFLOW
                 PERFORM START-EDIT.
             MOVE IR TO CODE-HOLD.
         CHECK-INPUTS.
             IF CODE-NO OF INPUT-1 = '1'
                 PERFORM CHECK-INPUT-1 THRU CHECK-INPUT-1-END
             ELSE PERFORM CHECK-INPUT-2 THRU CHECK-INPUT-2-END.
             GO TO READ-SORTED-FILE.
         CHECK-INPUT-1.
             PERFORM CHECK-FA-NO THRU CHECK-C-ALLOC.
             MOVE FA-NO OF INPUT-1 TO FA-NO OF DATA-LINE (1), ACCT-NO.
             MOVE 0 TO IC.
             MOVE 2 TO I.
             PERFORM CHECK-C-CNTRS THRU CHECK-C-CNTRS-END.
         CHECK-INPUT-1-END.
             EXIT.
         CHECK-INPUT-2.
             PERFORM CHECK-FA-NO.
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           PERFORM CHECK-FA-MATCH.
           MOVE 1 TO I.
           PERFORM CHECK-C-CNTRS THRU CHECK-C-CNTRS-END.
       CHECK-INPUT-2-END.
           EXIT.
       CHECK-FA-NO.
           IF FA-NO OF INPUT-1 = SPACES
               MOVE '1' TO ERR-HOLD
               PERFORM ERROR-ROUTINE.
       CHECK-C-CAT.
           PERFORM FILL-C-CAT VARYING I FROM 1 BY 1 UNTIL I > 2
           IF C-CAT-BLOCK OF INPUT-1 = SPACES
               MOVE '2' TO ERR-HOLD
               PERFORM ERROR-ROUTINE
               GO TO CHECK-C-CAT-END.
           EXAMINE C-CAT-BLOCK OF INPUT-1 REPLACING ALL ' ' BY '0'.
           IF C-CAT-BLOCK OF INPUT-1 NOT NUMERIC
               MOVE '2' TO ERR-HOLD
               PERFORM ERROR-ROUTINE.
       CHECK-C-CAT-END.
           EXIT.
       CHECK-C-ALLOC.
           IF C-ALLOC OF INPUT-1 = SPACE
               MOVE '3' TO ERR-HOLD
               PERFORM ERROR-ROUTINE.
           MOVE C-ALLOC OF INPUT-1 TO C-ALLOC OF DATA-LINE (1),
               C-ALLOC OF CR-REC.
       FILL-C-CAT.
           MOVE C-CAT OF C-CAT-BLOCK (I) TO C-CAT OF C-CAT-BLK (1, I),
               C-CAT OF C-CATS (I).
       CHECK-C-CNTRS.
           IF C-CNTR-BLK OF INPUT-2 (I) = SPACES
               GO TO CHECK-C-CNTRS-RCHK.
           IF C-CNTR OF INPUT-2 (I) = SPACES OR
               MATCH-NO OF INPUT-2 (I) = SPACES
                   MOVE '4' TO ERR-HOLD
                   PERFORM ERROR-ROUTINE
                   GO TO CHECK-C-CNTR-CONT.
           IF C-CNTR OF INPUT-2 (I) NOT NUMERIC OR
               MATCH-NO OF INPUT-2 (I) NOT NUMERIC
                   MOVE '4' TO ERR-HOLD
                   PERFORM ERROR-ROUTINE.
       CHECK-C-CNTR-CONT.
           ADD 1 TO IC.
           IF IC > 31 MOVE 'V' TO ERR-HOLD
               PERFORM ERROR-ROUTINE
               GO TO CHECK-C-CNTRS-END.
           IF IR = 1 THEN MOVE IC TO J
           ELSE MOVE I TO J.
           MOVE C-CNTR OF INPUT-2 (I) TO CC-NO (IR, J),
            C-CNTR OF CR-REC (IC).
        MOVE MATCH-NO OF INPUT-2 (I) TO MATCH (IR, J),
            MATCH-NO OF CR-REC (IC).
        MOVE IC TO NO-CC OF DATA-LINE (1), NO-CC OF CR-REC.
        MOVE '/' TO DELIM (IR, J).
        MOVE IC TO NO-CC OF DATA-LINE (1), NO-CC OF CR-REC.
        ADD 1 TO I
        IF I NOT > 8 GO TO CHECK-C-CNTRS.
        GO TO CHECK-C-CNTRS-END.
    CHECK-C-CNTRS-RCHK.
        IF IR = 1 AND I = 2 OR IR > 1 AND I = 1
            MOVE '4' TO ERR-HOLD
            PERFORM ERROR-ROUTINE.
    CHECK-C-CNTRS-END.
        EXIT.
    CHECK-FA-MATCH.
        IF FA-NO OF INPUT-2 NOT = FA-NO OF DATA-LINE (1)
            MOVE '1' TO ERR-HOLD
            PERFORM ERROR-ROUTINE
            MOVE FA-NO OF INPUT-2 TO FA-NO OF DATA-LINE (2).
    ERROR-ROUTINE.
        IF IE NOT > 3
            ADD 1 TO IE
        ELSE MOVE 1 TO IE.
        IF IE = 1 MOVE ALL '*' TO ERRS OF DATA-LINE (IR).
        MOVE ERR-HOLD TO ERR-NO (IR, IE).
    WRITE-DATA.
        MOVE DATA-LINE (I) TO PRINT-LINE.
        PERFORM WRITE-OUT.
    WRITE-DISK.
        ADD NO-CC OF CR-REC TO STL-ACCTS, TTL-ACCTS.
        IF ERRS OF DATA-LINE (1) = SPACES AND
            ERRS OF DATA-LINE (2) = SPACES AND
            ERRS OF DATA-LINE (3) = SPACES AND
            ERRS OF DATA-LINE (4) = SPACES
                ADD NO-CC OF CR-REC TO STL-GOOD, TTL-GOOD
                WRITE CR-REC INVALID KEY
                    SUBTRACT NO-CC OF CR-REC FROM STL-GOOD, TTL-GOOD
                    MOVE ALL '*' TO ERRS OF DATA-LINE (1)
                    MOVE 'INVLD KEY' TO CC-MC-BLK (1, 8).
    BLANK-LINE.
        MOVE SPACES TO PRINT-LINE.
    WRITE-OUT.
        WRITE PRINT-LINE BEFORE ADVANCING 1.
        ADD 1 TO LINE-CT.
    CHECK-OVFLOW.
        IF LINE-CT > MAX-LINE
            PERFORM FILL-STL-ACCT-LINE
            PERFORM PRINT-ACCT-LINE
            MOVE 0 TO STL-ACCTS, STL-GOOD
```

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          ADD 1 TO PAGE-NO
          MOVE 0 TO LINE-CT
          PERFORM PRINT-HEADING.
 READ-SORT-INPUT.
      READ CARD-IN AT END
          GO TO READ-SORT-INPUT-END.
      IF CODE-NO OF INPUT-CARD = '1' OR '2' OR '3' OR '4'
          RELEASE SORT-INPUT FROM INPUT-CARD
      ELSE MOVE INPUT-CARD TO CARD-FLD OF SORT-ERR-LINE
          MOVE PRINT-LINE TO SORT-ERR-LINE
          PERFORM WRITE-OUT.
      GO TO READ-SORT-INPUT.
 READ-SORT-INPUT-END.
      EXIT.
 WRITE-SORT-OUTPUT.
      RETURN FILE-SORT RECORD INTO INPUT-REC AT END
          GO TO WRITE-SORT-OUTPUT-END.
      WRITE INPUT-REC.
      GO TO WRITE-SORT-OUTPUT.
 WRITE-SORT-OUTPUT-END.
      EXIT.
 FILL-STL-ACCT-LINE.
      MOVE STL-ACCTS TO ALL-ACCTS.
      MOVE STL-GOOD TO GOOD-ACCTS.
 FILL-TTL-ACCT-LINE.
      MOVE 'CUMM' TO TEXT-1.
      MOVE TTL-ACCTS TO ALL-ACCTS.
      MOVE TTL-GOOD TO GOOD-ACCTS.
 PRINT-ACCT-LINE.
      PERFORM BLANK-LINE THRU WRITE-OUT.
      MOVE ACCT-LINE TO PRINT-LINE.
      PERFORM WRITE-OUT.
 CLOSE-ROUTINE.
      PERFORM WRITE-DISK.
      IF DATA-OUT NOT = SPACES
          PERFORM WRITE-DATA VARYING I FROM 1 BY 1
              UNTIL I > 4 OR DATA-LINE (I) = SPACES.
      PERFORM FILL-STL-ACCT-LINE.
      PERFORM PRINT-ACCT-LINE.
      PERFORM FILL-TTL-ACCT-LINE THRU PRINT-ACCT-LINE.
 CLOSE-FILES.
      CLOSE PRINT-OUT, SORTED-FILE. CROSS-REF-FILE.
 PROGRAM-END.
      STOP RUN.
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    PGMNAME=WUASBCMF
IDENTIFICATION DIVISION.
PROGRAM-ID. WUASBCMF.
AUTHOR. ACT SYSTEMS, INC
        SUITE 200
        807 W MORSE BLVD
        WINTER PARK, FL 32789.
DATE-WRITTEN. AUGUST 1977.
DATE-COMPILED.
REMARKS. THIS PROGRAM EDITS THE COST MATRIX ACCOUNT CARDS, FLAGS
         ANY DISCREPANCIES, AND BUILDS THE COST ACCOUNT MATRIX
         FILE.
ENVIRONMENT DIVISION.
CONFIGURATION SECTION.
SOURCE-COMPUTER. IBM-370-168.
OBJECT-COMPUTER. IBM-370-168.
SPECIAL-NAMES.
    C01 IS NEW-PAGE.
INPUT-OUTPUT SECTION.
FILE-CONTROL.
    SELECT CARD-IN
        ASSIGN TO UR-2540R-S-CARDIN
        ACCESS MODE IS SEQUENTIAL.
    SELECT CROSS-REF-FILE
        ASSIGN TO DA-3330-I-CRTABFI
        ACCESS MODE IS SEQUENTIAL
        RECORD KEY IS ACCT-NO.
    SELECT COST-MATRIX-FILE
        ASSIGN TO DA-3330-I-CMFILE
        ACCESS MODE IS SEQUENTIAL
        RECORD KEY IS CM-NUMBER.
    SELECT FINANCIAL-ACCT-TABFI
        ASSIGN TO DA-3330-I-FATABFI
        ACCESS MODE IS RANDOM
        NOMINAL KEY IS FA-NOMINAL
        RECORD KEY IS FA-NUMBER.
    SELECT COST-CNTR-TABFI
        ASSIGN TO DA-3330-I-CCTABFI
        ACCESS MODE IS RANDOM
        NOMINAL KEY IS CC-NOMINAL
        RECORD KEY IS CC-NUMBER.
    SELECT SPECIAL-ACCT-TABFI
        ASSIGN TO UT-3330-S-SATABFI
        ACCESS MODE IS SEQUENTIAL.
    SELECT FILE-SORT
        ASSIGN TO UT-3330-S-FILESORT
        ACCESS MODE IS SEQUENTIAL.
    SELECT SORTED-FILE
        ASSIGN TO UT-3330-S-SORTEDFI
        ACCESS MODE IS SEQUENTIAL.
    SELECT PRINT-OUT
        ASSIGN TO UR-1403-S-PRINTOUT
        ACCESS MODE IS SEQUENTIAL.
DATA DIVISION.
FILE SECTION.
FD  CARD-IN
    RECORD CONTAINS 80 CHARACTERS
    LABEL RECORDS ARE OMITTED
    DATA RECORD IS DATE-CARD.
01  DATE-CARD.
    05  DATE-IN         PIC X(18).
    05  TITLE-IN        PIC X(24).
    05  FILLER          PIC X(38).
FD  CROSS-REF-FILE
    RECORD CONTAINS 265 CHARACTERS
    BLOCK CONTAINS 4 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS CR-REC.
01  CR-REC.
    05  ACCT-NO PIC X(10).
    05  C-ALLOC PIC X.
    05  C-CATS.
        10  C-CAT OCCURS 2 TIMES PIC XX.
    05  NO-CC    PIC 99.
    05  C-CNTR-BLK  OCCURS 31 TIMES.
        10  C-CNTR          PIC X(4).
        10  MATCH-NO        PIC X(4).
FD  FINANCIAL-ACCT-TABFI
    BLOCK CONTAINS 8 RECORDS
    RECORD CONTAINS 58 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS FA-REC.
01  FA-REC.
    05  FA-NUMBER       PIC X(10).
    05  FA-NAME         PIC X(20) OCCURS 2 TIMES.
    05  FILLER          PIC X(8).
FD  COST-CNTR-TABFI
    BLOCK CONTAINS 8 RECORDS
    RECORD CONTAINS 30 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS CC-REC.
01  CC-REC.
    05  CC-NUMBER       PIC X(4).
    05  CC-NAME         PIC X(13) OCCURS 2 TIMES.
FD  SPECIAL-ACCT-TABFI
    BLOCK CONTAINS 0 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS SPEC-ACCT-REC.
01  SPEC-ACCT-REC.
    05  RECORD-COUNT.
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        10  NO-OF-RECS  PIC 9(4).
        10  FILLER      PIC X(16).
    05  SPEC-ACCT OCCURS 1 TO 99 TIMES
        DEPENDING ON NO-OF-RECS
        ASCENDING KEY IS SA-NO INDEXED BY IA.
        10  SA-NO       PIC XX.
        10  SA-NAME     PIC X(20).
SD  FILE-SORT
    RECORD CONTAINS 21 CHARACTERS
    DATA RECORD IS SORT-INPUT.
01  SORT-INPUT.
    05  SORT-FIRST-16   PIC X(16).
    05  FILLER          PIC X(5).
FD  SORTED-FILE
    RECORD CONTAINS 21 CHARACTERS
    BLOCK CONTAINS 10 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS INPUT-REC.
01  INPUT-REC.
    05  FA-NO.
        10  FA-NO-1     PIC X.
        10  FA-NO-2     PIC X(9).
    05  CC-NO       PIC X(4).
    05  SA-NO       PIC XX.
    05  MATCH-NO    PIC X(4).
    05  C-ALLOC     PIC X.
FD  COST-MATRIX-FILE
    RECORD CONTAINS 80 CHARACTERS
    BLOCK CONTAINS 5 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS CM-REC.
01  CM-REC.
    05  MATCH-NO    PIC X(4).
    05  CM-NUMBER.
        10  FA-NO   PIC X(10).
        10  CC-NO   PIC X(4).
        10  SA-NO   PIC XX.
    05  AMTS        PIC 9(8)V99 OCCURS 6 TIMES.
FD  PRINT-OUT
    RECORD CONTAINS 133 CHARACTERS
    LABEL RECORDS ARE OMITTED
    DATA RECORD IS PRINT-LINE.
01  PRINT-LINE  PIC X(133).
WORKING-STORAGE SECTION.
77  LINE-CT     PIC 9(4) COMP VALUE 0.
77  PAGE-NO     PIC 9(4) COMP VALUE 1.
77  MAX-LINE    PIC 99 COMP VALUE 56.
77  IB          PIC 9 COMP.
77  IC      PIC 99 COMP.
77  NF-ERR      PIC X(20) VALUE 'RECORD NOT FOUND    '.
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77  FA-NOMINAL  PIC X(10).
77  CC-NOMINAL  PIC X(4).
01  ACCT-COUNTERS.
    05  STL-ACCTS   PIC 9(6) COMP VALUE 0.
    05  TTL-ACCTS   PIC 9(6) COMP VALUE 0.
    05  STL-GOOD    PIC 9(6) COMP VALUE 0.
    05  TTL-GOOD    PIC 9(6) COMP VALUE 0.
01  ACCT-LINE.
    05  FILLER  PIC X VALUE SPACE.
    05  TEXT-1  PIC X(4) VALUE 'PAGE'.
    05  FILLER  PIC X(11) VALUE ' TOTALS    '.
    05  FILLER PIC X(4) VALUE 'ALL '.
    05  ALL-ACCTS   PIC Z(5)9.
    05  FILLER  PIC XX  VALUE SPACES.
    05  FILLER  PIC X(5) VALUE 'GOOD '.
    05  GOOD-ACCTS  PIC Z(5)9.
    05  FILLER PIC X(94) VALUE SPACES.
01  DATA-BLK.
    05  FA-NO   PIC X(10).
    05  CC-NO   PIC X(4).
    05  SA-NO   PIC XX.
    05  MATCH-NO PIC X(4).
    05  C-ALLOC     PIC X.
01  HEADING-LINE.
    05  FILLER  PIC X(55) VALUE SPACES.
    05  FILLER  PIC X(22) VALUE 'COST MATRIX FILE INPUT'.
    05  FILLER  PIC X(56) VALUE SPACES.
01  DATE-LINE.
    05  FILLER  PIC X VALUE SPACE.
    05  FILLER  PIC X(6) VALUE 'DATE: '.
    05  DATE-1  PIC X(18).
    05  FILLER  PIC X(40) VALUE SPACES.
    05  FILLER  PIC X(3) VALUE 'FOR'.
    05  FILLER  PIC X(53) VALUE SPACES.
    05  FILLER  PIC X(4) VALUE 'PAGE'.
    05  PAGE-1  PIC ZZZ9.
    05  FILLER  PIC X(4) VALUE SPACES.
01  TITLE-LINE.
    05  FILLER  PIC X(54) VALUE SPACES.
    05  TITLE   PIC X(24).
    05  FILLER  PIC X(55) VALUE SPACES.
01  COL-HEADING-1.
    05  FILLER  PIC X(7) VALUE SPACES.
    05  FILLER  PIC X(17) VALUE 'FINANCIAL ACCOUNT'.
    05  FILLER  PIC X(17) VALUE SPACES.
    05  FILLER  PIC X(11) VALUE 'COST CENTER'.
    05  FILLER  PIC X(21) VALUE SPACES.
    05  FILLER  PIC X(13) VALUE 'COST CATEGORY'.
    05  FILLER  PIC X(10) VALUE SPACES.
    05  FILLER  PIC X(15) VALUE 'COST ALLOCATION'.
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           05  FILLER  PIC X(4) VALUE SPACES.
           05  FILLER  PIC X(10) VALUE 'MATCH CODE'.
           05  FILLER  PIC X(3) VALUE SPACES.
           05  FILLER  PIC X(5) VALUE 'ERROR'.
       01  COL-HEADING-2.
           05  FILLER  PIC X(6) VALUE SPACES.
           05  FILLER  PIC X VALUE '#'.
           05  FILLER  PIC X(14) VALUE SPACES.
           05  FILLER  PIC X(4) VALUE 'NAME'.
           05  FILLER  PIC X(15) VALUE SPACES.
           05  FILLER  PIC X VALUE '#'.
           05  FILLER  PIC X(11) VALUE SPACES.
           05  FILLER  PIC X(4) VALUE 'NAME'.
           05  FILLER  PIC X(16) VALUE SPACES.
           05  FILLER  PIC X VALUE '#'.
           05  FILLER  PIC X(10) VALUE SPACES.
           05  FILLER  PIC X(4) VALUE 'NAME'.
           05  FILLER  PIC X(14) VALUE SPACES.
           05  FILLER  PIC X(6) VALUE 'METHOD'.
           05  FILLER  PIC X(12) VALUE SPACES.
           05  FILLER  PIC X VALUE '#'.
           05  FILLER  PIC X(9) VALUE SPACES.
           05  FILLER  PIC X(4) VALUE 'FLAG'.
       01  DATA-OUT.
           05  DATA-LINE OCCURS 2 TIMES.
               10  FILLER       PIC X.
               10  FA-NO        PIC X(10).
               10  FILLER       PIC X(3).
               10  FA-NAME      PIC X(20).
               10  FILLER       PIC X(5).
               10  CC-NO        PIC X(4).
               10  FILLER       PIC X(3).
               10  CC-NAME      PIC X(20).
               10  FILLER       PIC X(5).
               10  SA-NO        PIC XX.
               10  FILLER       PIC X(3).
               10  SA-NAME      PIC X(20).
               10  FILLER       PIC X(7).
               10  C-ALLOC      PIC X.
               10  FILLER       PIC X(14).
               10  MATCH-NO     PIC X(4).
               10  FILLER       PIC X(7).
               10  CM-ERR       PIC XX.
               10  FILLER       PIC XX.
       PROCEDURE DIVISION.
       OPEN-FILES.
               OPEN INPUT CARD-IN, FINANCIAL-ACCT-TABFI, CROSS-REF-FILE,
                    COST-CNTR-TABFI, SPECIAL-ACCT-TABFI.
               OPEN OUTPUT PRINT-OUT, COST-MATRIX-FILE.
       READ-CARDIN.
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```
        READ CARD-IN AT END GO TO CLOSE-ROUTINE.
FILL-HEADING.
        MOVE DATE-IN TO DATE-1.
        MOVE TITLE-IN TO TITLE.
SORT-ROUTINE.
        OPEN OUTPUT SORTED-FILE.
        SORT FILE-SORT ON ASCENDING KEY
            SORT-FIRST-16
        INPUT PROCEDURE READ-SORT-INPUT THRU
            READ-SORT-INPUT-END
        OUTPUT PROCEDURE WRITE-SORT-OUTPUT THRU
            WRITE-SORT-OUTPUT-END.
CLOSE-SORT-FILES.
        CLOSE SORTED-FILE, CARD-IN.
        OPEN INPUT SORTED-FILE.
PRINT-HEADING.
    PERFORM BLANK-LINE.
    WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
    MOVE HEADING-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE PAGE-NO TO PAGE-1.
    MOVE DATE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE TITLE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    PERFORM BLANK-LINE THRU WRITE-OUT.
    MOVE COL-HEADING-1 TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE COL-HEADING-2 TO PRINT-LINE.
    PERFORM WRITE-OUT.
    PERFORM BLANK-LINE THRU WRITE-OUT.
READ-SPECIAL-ACCTS.
    READ SPECIAL-ACCT-TABFI AT END
        MOVE 'SPECIAL-ACCT-TABFI CONTAINS NO DATA' TO PRINT-LINE
        PERFORM WRITE-OUT
        GO TO CLOSE-ROUTINE.
START-EDIT.
    READ SORTED-FILE AT END
        GO TO CLOSE-ROUTINE.
    MOVE SPACES TO DATA-OUT.
FIND-FA-INFO.
    MOVE FA-NO OF INPUT-REC TO FA-NOMINAL,
        FA-NO OF DATA-LINE (1).
    IF FA-NO-1 = '-'
        MOVE 'CONTRA ACCOUNT' TO FA-NAME OF DATA-LINE (1)
        GO TO FIND-FA-INFO-CONT.
    READ FINANCIAL-ACCT-TABFI INVALID KEY
        MOVE NF-ERR TO FA-NAME OF DATA-LINE (1)
        MOVE ALL '*' TO CM-ERR OF DATA-LINE (1)
        GO TO FIND-CC-INFO.
```

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           MOVE FA-NAME OF FA-REC (1) TO FA-NAME OF DATA-LINE (1).
           MOVE FA-NAME OF FA-REC (2) TO FA-NAME OF DATA-LINE (2).
       FIND-FA-INFO-CONT.
           MOVE FA-NUMBER TO FA-NO OF CM-NUMBER.
       FIND-CC-INFO.
           MOVE CC-NO OF INPUT-REC TO CC-NOMINAL,
               CC-NO OF DATA-LINE (1).
           READ COST-CNTR-TABFI INVALID KEY
               MOVE NF-ERR TO CC-NAME OF DATA-LINE (1)
               MOVE ALL '*' TO CM-ERR OF DATA-LINE (1)
               GO TO FIND-SA-INFO.
           MOVE CC-NUMBER TO CC-NO OF CM-NUMBER.
           MOVE CC-NAME OF CC-REC (1) TO CC-NAME OF DATA-LINE (1).
           MOVE CC-NAME OF CC-REC (2) TO CC-NAME OF DATA-LINE (2).
       FIND-SA-INFO.
           MOVE 1 TO IB.
           PERFORM SEARCH-ROUTINE.
       CHECK-COST-ALLOC.
           IF C-ALLOC OF INPUT-REC NOT = SPACE
               MOVE C-ALLOC OF INPUT-REC TO C-ALLOC OF DATA-LINE (1)
           ELSE MOVE ALL '*' TO CM-ERR OF DATA-LINE (1),
               C-ALLOC OF DATA-LINE (1).
       CHECK-MATCH-NO.
           IF MATCH-NO OF INPUT-REC NOT = SPACES
               MOVE MATCH-NO OF INPUT-REC TO MATCH-NO OF CM-REC,
                   MATCH-NO OF DATA-LINE (1)
           ELSE MOVE ALL '*' TO CM-ERR OF DATA-LINE (1),
               MATCH-NO OF DATA-LINE (1).
       CHECK-ERRORS.
           ADD 1 TO STL-ACCTS, TTL-ACCTS.
           IF CM-ERR OF DATA-LINE (1) = SPACES
               MOVE 1 TO IB
               PERFORM ZERO-AMTS 6 TIMES
               PERFORM FILL-DATA.
           MOVE 1 TO IB.
           PERFORM WRITE-DATA 2 TIMES.
           PERFORM BLANK-LINE THRU WRITE-OUT.
           PERFORM PAGE-OVFLOW.
           GO TO START-EDIT.
       SEARCH-ROUTINE.
           MOVE SA-NO OF INPUT-REC TO SA-NO OF DATA-LINE (IB).
           SET IA TO 1.
           SEARCH ALL SPEC-ACCT AT END
               MOVE NF-ERR TO SA-NAME OF DATA-LINE (IB)
               MOVE ALL '*' TO CM-ERR OF DATA-LINE (IB)
           WHEN SA-NO OF SPEC-ACCT (IA) = SA-NO OF INPUT-REC
               MOVE SA-NAME OF SPEC-ACCT (IA) TO
                   SA-NAME OF DATA-LINE (IB)
               MOVE SA-NO OF SPEC-ACCT (IA) TO SA-NO OF CM-NUMBER.
       FILL-DATA.
```

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           ADD 1 TO STL-GOOD, TTL-GOOD.
           WRITE CM-REC INVALID KEY
               SUBTRACT 1 FROM STL-GOOD, TTL-GOOD
               MOVE ALL '*' TO CM-ERR OF DATA-LINE (1)
               MOVE 'INVALID KEY' TO FA-NAME OF DATA-LINE (1).
       WRITE-DATA.
           IF DATA-LINE (IB) NOT = SPACES
               MOVE DATA-LINE (IB) TO PRINT-LINE
               PERFORM WRITE-OUT.
           ADD 1 TO IB.
       BLANK-LINE.
           MOVE SPACES TO PRINT-LINE.
       WRITE-OUT.
           WRITE PRINT-LINE BEFORE ADVANCING 1.
           ADD 1 TO LINE-CT.
       PAGE-OVFLOW.
           IF LINE-CT > MAX-LINE
               PERFORM FILL-STL-ACCT-LINE
               PERFORM PRINT-ACCT-LINE
               MOVE 0 TO STL-ACCTS, STL-GOOD
               ADD 1 TO PAGE-NO
               MOVE 0 TO LINE-CT
               PERFORM PRINT-HEADING.
       ZERO-AMTS.
           MOVE ZERO TO AMTS OF CM-REC (IB).
           ADD 1 TO IB.
      *
      *    INPUT AND OUTPUT SORT ROUTINES
      *
       READ-SORT-INPUT.
           READ CROSS-REF-FILE AT END
               GO TO READ-SORT-INPUT-END.
           MOVE SPACES TO DATA-BLK.
           MOVE ACCT-NO TO FA-NO OF DATA-BLK.
           MOVE C-ALLOC OF CR-REC TO C-ALLOC OF DATA-BLK.
           MOVE 1 TO IB, IC.
           PERFORM STORE-C-CAT 2 TIMES.
           GO TO READ-SORT-INPUT.
       STORE-C-CAT.
           IF C-CAT (IB) NOT = SPACES
               MOVE C-CAT (IB) TO SA-NO OF DATA-BLK
               PERFORM RELEASE-INPUT VARYING IC FROM 1 BY 1
                   UNTIL IC > NO-CC.
           ADD 1 TO IB.
       RELEASE-INPUT.
           MOVE C-CNTR (IC) TO CC-NO OF DATA-BLK.
           MOVE MATCH-NO OF C-CNTR-BLK (IC) TO MATCH-NO OF DATA-BLK.
           RELEASE SORT-INPUT FROM DATA-BLK.
       READ-SORT-INPUT-END.
           EXIT.
```

```
 WRITE-SORT-OUTPUT.
     RETURN FILE-SORT RECORD INTO INPUT-REC AT END
         GO TO WRITE-SORT-OUTPUT-END.
     WRITE INPUT-REC.
     GO TO WRITE-SORT-OUTPUT.
 WRITE-SORT-OUTPUT-END.
     EXIT.
*
 FILL-STL-ACCT-LINE.
     MOVE STL-ACCTS TO ALL-ACCTS.
     MOVE STL-GOOD TO GOOD-ACCTS.
 FILL-TTL-ACCT-LINE.
     MOVE 'CUMM' TO TEXT-1.
     MOVE TTL-ACCTS TO ALL-ACCTS.
     MOVE TTL-GOOD TO GOOD-ACCTS.
 PRINT-ACCT-LINE.
     PERFORM BLANK-LINE THRU WRITE-OUT.
     MOVE ACCT-LINE TO PRINT-LINE.
     PERFORM WRITE-OUT.
 CLOSE-ROUTINE.
     PERFORM FILL-STL-ACCT-LINE.
     PERFORM PRINT-ACCT-LINE.
     PERFORM FILL-TTL-ACCT-LINE THRU PRINT-ACCT-LINE.
     CLOSE PRINT-OUT, SPECIAL-ACCT-TABFI, SORTED-FILE,
         FINANCIAL-ACCT-TABFI, COST-CNTR-TABFI, COST-MATRIX-FILE,
         CROSS-REF-FILE.
 PROGRAM-END.
     STOP RUN.
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```
      PGMNAME=WUASBDPT
.SYSIN DD *
  IDENTIFICATION DIVISION.
  PROGRAM-ID. WUASBDPT.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN. JUNE 1977.
  DATE-COMPILED.
  REMARKS. THIS PROGRAM EDITS THE SPECIAL ACCOUNT DESCRIPTION
           CARDS, FLAGS ANY DISCREPANCIES, AND BUILDS THE SPECIAL
           DEPRECIATION TABLE.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT SPECIAL-ACCT-TABFI
          ASSIGN TO UT-3330-S-SATABFI
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  CARD-IN
      RECORD CONTAINS 80 CHARACTERS
      LABEL RECORDS ARE OMITTED
      DATA RECORD IS INPUT-CARD.
  01  INPUT-CARD.
      05  CUST-CNTR         PIC X(4).
      05  FILLER            PIC X.
      05  DEP-AMOUNT        PIC 9(8)V99.
      05  FILLER            PIC X.
      05  COUNTY-CODE       PIC X.
      05  FILLER            PIC X(63).
  01  SPECIAL-TITLES.
      05  SA-NO             PIC XX.
      05  FILLER            PIC X.
      05  SPECIAL-TITLE     PIC X(24).
      05  FILLER            PIC X(53).
  01  DATE-CARD.
      05  DATE-IN      PIC X(18).
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     05  TITLE-IN    PIC X(24).
     05  DEP-ACCT-IN       PIC X(10).
     05  FILLER            PIC X(28).
 FD  PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
 01  PRINT-LINE       PIC X(133).
 FD  SPECIAL-ACCT-TABLE
     BLOCK CONTAINS 0 RECORDS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS SPEC-ACCT-REC.
 01  SPEC-ACCT-REC.
     05  RECORD-COUNT.
         10  NO-OF-RECS  PIC 9(4).
         10  DEP-ACCT-OUT PIC X(10).
         10  FILLER       PIC X(8).
     05  SPEC-ACCT OCCURS 1 TO 99 TIMES
         DEPENDING ON NO-OF-RECS
         ASCENDING KEY IS SA-NO INDEXED BY IA.
         10  COST-CNTR    PIC X(4).
         10  DEP-AMOUNT   PIC 9(8)V99.
         10  COUNTY-CODE  PIC X.
         10  FILLER       PIC X(7).
WORKING-STORAGE SECTION.
77  LINE-CT     PIC 9(4) COMP VALUE 0.
77  PAGE-NO     PIC 9(4) COMP VALUE 1.
77  MAX-LINE    PIC 99 COMP VALUE 56.
77  AMT-ACCUM              PIC 9(8)V99  VALUE 0.
01  HEADING-LINE.
    05  FILLER  PIC X(52) VALUE SPACES.
    05  FILLER  PIC X(28) VALUE 'SPECIAL ACCOUNT DESCRIPTIONS'.
    05  FILLER  PIC X(53) VALUE SPACES.
01  DATE-LINE.
    05  FILLER  PIC X VALUE SPACE.
    05  FILLER  PIC X(6) VALUE 'DATE: '.
    05  DATE-1  PIC X(18).
    05  FILLER  PIC X(40) VALUE SPACES.
    05  FILLER  PIC X(3) VALUE 'FOR'.
    05  FILLER  PIC X(53) VALUE SPACES.
    05  FILLER  PIC X(5) VALUE 'PAGE '.
    05  PAGE-1  PIC ZZZ9.
    05  FILLER  PIC XX VALUE SPACES.
01  TITLE-LINE.
    05  FILLER  PIC X(54) VALUE SPACES.
    05  TITLE   PIC X(24).
    05  FILLER  PIC X(55) VALUE SPACES.
01  DATA-OUT.
    05  FILLER           PIC X(52).
    05  COST-CNTR        PIC X(4).
    05  FILLER               PIC X(8).
    05  DEP-AMOUNT           PIC $BZ(7)9.99.
    05  FILLER               PIC X(56).
PROCEDURE DIVISION.
OPEN-FILES.
    OPEN INPUT CARD-IN.
    OPEN OUTPUT PRINT-OUT, SPECIAL-ACCT-TABFI.
CLEAR-FIELDS.
    MOVE SPACES TO DATA-OUT.
    MOVE ZERO TO NO-OF-RECS.
    SET IA TO 1.
READ-CARDIN.
    READ CARD-IN AT END GO TO CLOSE-ROUTINE.
FILL-HEADING.
    MOVE DATE-IN TO DATE-1.
    MOVE TITLE-IN TO TITLE.
    MOVE DEP-ACCT-IN TO DEP-ACCT-OUT.
PRINT-HEADING.
    PERFORM BLANK-LINE.
    WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
    MOVE HEADING-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE PAGE-NO TO PAGE-1.
    MOVE DATE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE TITLE-LINE TO PRINT-LINE.
    PERFORM WRITE-OUT.
WRITE-OUT-RECS.
    PERFORM READ-CARDIN.
    IF SA-NO = '**' THEN
        PERFORM BLANK-LINE THRU WRITE-OUT
        MOVE SPECIAL-TITLE TO TITLE
        MOVE TITLE-LINE TO PRINT-LINE
        PERFORM WRITE-OUT
        PERFORM BLANK-LINE THRU WRITE-OUT
        GO TO WRITE-OUT-RECS.
FILL-DATA.
    MOVE CORR INPUT-CARD TO DATA-OUT, SPEC-ACCT (IA).
    MOVE DATA-OUT TO PRINT-LINE.
    PERFORM WRITE-OUT.
    MOVE SPACES TO DATA-OUT.
    ADD DEP-AMOUNT OF INPUT-CARD TO AMT-ACCUM.
    ADD 1 TO NO-OF-RECS.
    SET IA UP BY 1.
    GO TO WRITE-OUT-RECS.
BLANK-LINE.
    MOVE SPACES TO PRINT-LINE.
WRITE-OUT.
    WRITE PRINT-LINE BEFORE ADVANCING 1.
    ADD 1 TO LINE-CT.
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     IF LINE-CT > MAX-LINE
          ADD 1 TO PAGE-NO
          MOVE 0 TO LINE-CT
          PERFORM PRINT-HEADING.
CLOSE-ROUTINE.
     WRITE SPEC-ACCT-REC.
     PERFORM BLANK-LINE THRU WRITE-OUT.
     PERFORM WRITE-OUT.
     MOVE AMT-ACCUM TO DEP-AMOUNT OF DATA-OUT.
     MOVE DATA-OUT TO PRINT-LINE.
     PERFORM WRITE-OUT.
     CLOSE CARD-IN, PRINT-OUT, SPECIAL-ACCT-TABFI.
PROGRAM-END.
     STOP RUN.
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      PGMNAME=WUASBCDP
.SYSIN    DD   *
  ID DIVISION.
  PROGRAM-ID. WUASBCDP.
  AUTHOR.  ACT SYSTEMS, INC
           SUITE 200
           807 W MORSE BLVD
           WINTER PARK, FL 32789.
  DATE-WRITTEN. DECEMBER, 1977.
  DATE-COMPILED.
  REMARKS.    THIS PROGRAM READS ONE CARD
              AND BUILDS THE CURRENT DEPRECIATION
              FILE.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT DEPRECIATION-TABFI
          ASSIGN TO UT-3330-S-DPTABFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-CNTR-TABFI
          ASSIGN TO DA-3330-I-CCTABFI
          ACCESS MODE IS RANDOM
          NOMINAL KEY IS CC-NOMINAL
          RECORD KEY IS CC-NUMBER.
      SELECT FINANCIAL-COST-ALLOCATION
          ASSIGN TO UT-3330-S-FICALFI
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  CARD-IN
      RECORD CONTAINS 80 CHARACTERS
      LABEL RECORDS ARE OMITTED
      DATA RECORD IS INPUT-CARD.
  01  INPUT-CARD.
      05  DATE-IN            PIC X(18).
      05  TITLE-IN           PIC X(24).
      05  PERIOD-IN.
          10  PERIOD1        PIC X.
          10  FILLER         PIC X(8).
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    05  FILLER               PIC X(29).
FD  PRINT-OUT
    RECORD CONTAINS 133 CHARACTERS
    LABEL RECORDS ARE OMITTED
    DATA RECORD IS PRINT-LINE.
01  PRINT-LINE.
    05  FILLER               PIC X.
    05  PRINT-DATA           PIC X(132).
FD  DEPRECIATION-TABFI
    BLOCK CONTAINS 0 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS DEPRECIATION-REC.
01  DEPRECIATION-REC.
    05  RECORD-COUNT.
        10  NO-OF-RECS       PIC 9(4).
        10  ACCT-NO          PIC X(10).
        10  FILLER           PIC X(8).
    05  DEP-REC   OCCURS 1 TO 99 TIMES
        DEPENDING ON NO-OF-RECS
        ASCENDING KEY IS COST-CNTR INDEXED BY CC.
        10  COST-CNTR        PIC X(4).
        10  AMOUNT           PIC 9(8)V99.
        10  COUNTY-CODE      PIC X.
        10  FILLER           PIC X(7).
FD  FINANCIAL-CUST-ALLOCATION
    BLOCK CONTAINS 20 RECORDS
    RECORD CONTAINS 26 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS DISK-OUT.
01  DISK-OUT.
    05  DISK-ACCT-NO.
        10  FILLER           PIC X(9).
        10  DISK-COUNTY-CODE PIC X.
    05  DISK-COST-CNTR       PIC X(4).
    05  DISK-COST-CAT        PIC XX.
    05  DISK-CURRENT-AMT     PIC S9(8)V99.
01  FIRST-TWO-RECS.
    05  FILLER               PIC X.
    05  SORT-SEQUENCE        PIC X.
    05  DISK-TITLE.
        10  DISK-DATE        PIC X(18).
        10  FILLER           PIC X(6).
FD  COST-CNTR-TABFI
    BLOCK CONTAINS 8 RECORDS
    RECORD CONTAINS 30 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS CC-REC.
01  CC-REC.
    02  CC-NUMBER            PIC X(4).
    02  CC-NAME              PIC X(13) OCCURS 2 TIMES.
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 WORKING-STORAGE SECTION.
 77  SOURCE-CODE            PIC  X VALUE '6'.
 77  LINE-CT                PIC 99 COMP VALUE 0.
 77  PAGE-CT                PIC 9(4) COMP VALUE 1.
 77  PERIOD                 PIC 99 VALUE 12.
 77  CC-NOMINAL             PIC X(4).
 77  NO-OF-COST-CNTRS       PIC 99 COMP VALUE 0.
 77  AMT-HOLD               PIC 9(8)V99.
 77  MAX-LINE               PIC 99 COMP VALUE 56.
 77  YEARLY-DEP-TOTAL       PIC 9(8)V99 VALUE ZERO.
 77  CURRENT-DEP-TOTAL      PIC 9(8)V99 VALUE ZERO.
 01  HEAD-1.
     05  FILLER             PIC X(56) VALUE SPACES.
     05  FILLER             PIC X(18) VALUE 'DEPRECIATION TABLE'.
     05  FILLER             PIC X(58) VALUE SPACES.
 01  HEAD-2.
     05  FILLER             PIC X(15) VALUE 'PERIOD ENDING: '.
     05  DATE-OUT           PIC X(18).
     05  FILLER             PIC X(31) VALUE SPACES.
     05  FILLER             PIC X(3)  VALUE 'FOR'.
     05  FILLER             PIC X(55) VALUE SPACES.
     05  FILLER             PIC X(6)  VALUE 'PAGE: '.
     05  PAGE-OUT           PIC Z(4).
 01  HEAD-3.
     05  FILLER             PIC X(54) VALUE SPACES.
     05  TITLE-OUT          PIC X(24).
     05  FILLER             PIC X(54) VALUE SPACES.
 01  HEAD-4.
     05  FILLER             PIC X(29) VALUE 'DEPRECIATION PERIOD ENT
-                                     'ERED: '.
     05  FILLER             PIC X VALUE QUOTE.
     05  PERIOD-OUT         PIC X(7).
     05  FILLER             PIC X VALUE QUOTE.
     05  COM1               PIC X(54) VALUE SPACES.
     05  FILLER             PIC X(41) VALUE SPACES.
 01  HEAD-5.
     05  FILLER             PIC X(10) VALUE SPACES.
     05  FILLER             PIC X(7)  VALUE 'ACCOUNT'.
     05  FILLER             PIC X(10) VALUE SPACES.
     05  FILLER             PIC X(4)  VALUE 'COST'.
     05  FILLER             PIC X(11) VALUE SPACES.
     05  FILLER             PIC X(19) VALUE 'YEARLY DEPRECIATION'.
     05  FILLER             PIC X(14) VALUE SPACES.
     05  FILLER             PIC X(14) VALUE 'CURRENT PERIOD'.
     05  FILLER             PIC X(43) VALUE SPACES.
 01  HEAD-6.
     05  FILLER             PIC X(10) VALUE SPACES.
     05  FILLER             PIC X(6)  VALUE 'NUMBER'.
     05  FILLER             PIC X(10) VALUE SPACES.
     05  FILLER             PIC X(6)  VALUE 'CENTER'.
```

```
           05  FILLER              PIC X(16) VALUE SPACES.
           05  FILLER              PIC X(6)  VALUE 'AMOUNT'.
           05  FILLER              PIC X(19) VALUE SPACES.
           05  FILLER              PIC X(19) VALUE 'DEPRECIATION AMOUNT'.
           05  FILLER              PIC X(21) VALUE SPACES.
           05  FILLER              PIC X(8)  VALUE 'COMMENTS'.
           05  FILLER              PIC X(11) VALUE SPACES.
       01  DATA-LINE.
           05  FILLER              PIC X(10).
           05  ACCT-NO-OUT.
               10  FILLER          PIC X(9).
               10  COUNTY-CODE-OUT PIC X.
           05  FILLER              PIC X(7).
           05  COST-CNTR-OUT       PIC X(4).
           05  FILLER              PIC X(13).
           05  YEARLY-AMT-OUT      PIC -(8).--.
           05  FILLER              PIC X(20).
           05  CURRENT-AMT-OUT     PIC -(8).--.
           05  FILLER              PIC X(19).
           05  COMMENT-OUT         PIC X(25).
           05  FILLER              PIC XX.
       PROCEDURE DIVISION.
       OPEN-IO-FILES.
           OPEN INPUT CARD-IN,
                      DEPRECIATION-TABFI,
                      COST-CNTR-TABFI,
                OUTPUT PRINT-OUT,
                      FINANCIAL-COST-ALLOCATION.
       HOUSE-KEEP.
           MOVE SPACES TO DISK-OUT, DATA-LINE.
           PERFORM MOVE-SPACES.
       READ-CARDIN.
           READ CARD-IN AT END MOVE
                'NO DATE CARD **  JOB ABORTED' TO PRINT-DATA,
                PERFORM PRINT-LINE-OUT,
                GO TO CLOSE-IO-FILES.
           MOVE DATE-IN TO DATE-OUT.
           MOVE TITLE-IN TO TITLE-OUT.
       TEST-PERIOD.
           IF PERIOD1 = 'M' THEN
                MOVE ' MONTH '    TO PERIOD-OUT
                GO TO WRITE-FIRST-TWO-RECS.
           IF PERIOD1 = 'Y' THEN
                MOVE 1 TO PERIOD,
                MOVE ' YEAR  '    TO PERIOD-OUT,
                GO TO WRITE-FIRST-TWO-RECS.
           IF PERIOD1 = 'Q' THEN
                MOVE 4 TO PERIOD,
                MOVE 'QUARTER'    TO PERIOD-OUT,
                GO TO WRITE-FIRST-TWO-RECS.
```

```
     IF PERIOD1 = 'W' THEN
          MOVE 52 TO PERIOD,
          MOVE ' WEEK  '    TO PERIOD-OUT,
          GO TO WRITE-FIRST-TWO-RECS.
 INVALID-PERIOD-FALLTHRU.
     MOVE PERIOD-IN TO PERIOD-OUT.
     MOVE ' **** INVALID PERIOD ENTERED - DEFAULTED TO MONTH ****'
          TO COM1.
WRITE-FIRST-TWO-RECS.
     MOVE SPACES TO DISK-OUT.
     MOVE DATE-IN TO DISK-DATE.
     WRITE DISK-OUT.
     MOVE SPACES TO DISK-OUT.
     MOVE TITLE-IN TO DISK-TITLE.
     MOVE SOURCE-CODE TO SORT-SEQUENCE.
     WRITE DISK-OUT.
READ-DEPRECIATION-TABLE.
     READ DEPRECIATION-TABLE AT END
          MOVE 'DEPRECIATION TABLE CONTAINS NO DATA' TO PRINT-DATA
          PERFORM PRINT-LINE-OUT
          GO TO CLOSE-IO-FILES.
WRITE-HEADINGS.
     PERFORM MOVE-SPACES.
     WRITE PRINT-LINE BEFORE NEW-PAGE.
     MOVE PAGE-CT TO PAGE-OUT.
     ADD 1 TO PAGE-CT.
     MOVE 0 TO LINE-CT.
     MOVE HEAD-1 TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     MOVE HEAD-2 TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     MOVE HEAD-3 TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     PERFORM PRINT-LINE-OUT.
     MOVE HEAD-4 TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     PERFORM PRINT-LINE-OUT.
     MOVE HEAD-5 TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     MOVE HEAD-6 TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     PERFORM PRINT-LINE-OUT.
SET-POINTERS.
     SET CC TO 0.
     MOVE NO-OF-RECS TO NO-OF-COST-CNTRS.
START-EDIT.
     SET CC UP BY 1.
```

```
    IF CC > NO-OF-COST-CNTRS THEN
        GO TO CLOSE-IO-FILES.
    MOVE ACCT-NO TO DISK-ACCT-NO, ACCT-NO-OUT.
    MOVE COUNTY-CODE (CC) TO DISK-COUNTY-CODE COUNTY-CODE-OUT.
    MOVE COST-CNTR (CC) TO DISK-COST-CNTR, COST-CNTR-OUT,
                           CC-NOMINAL.
    MOVE AMOUNT (CC) TO AMT-HOLD, YEARLY-AMT-OUT.
    ADD AMOUNT (CC) TO YEARLY-DEP-TOTAL.
    DIVIDE AMT-HOLD BY PERIOD GIVING DISK-CURRENT-AMT.
    MOVE DISK-CURRENT-AMT TO CURRENT-AMT-OUT.
    ADD DISK-CURRENT-AMT TO CURRENT-DEP-TOTAL.
    PERFORM CHECK-COST-CNTR.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE SPACES TO COMMENT-OUT.
    WRITE DISK-OUT.
    IF LINE-CT > MAX-LINE THEN
        PERFORM WRITE-HEADINGS.
    GO TO START-EDIT.
CHECK-COST-CNTR.
    READ COST-CNTR-TABFI INVALID KEY
        MOVE 'INVALID COST CENTER *****' TO COMMENT-OUT.
MOVE-SPACES.
    MOVE SPACES TO PRINT-DATA.
PRINT-LINE-OUT.
    WRITE PRINT-LINE BEFORE 1.
    ADD 1 TO LINE-CT.
CLOSE-IO-FILES.
    PERFORM MOVE-SPACES.
    PERFORM PRINT-LINE-OUT 2 TIMES.
    MOVE SPACES TO DATA-LINE.
    MOVE YEARLY-DEP-TOTAL TO YEARLY-AMT-OUT.
    MOVE CURRENT-DEP-TOTAL TO CURRENT-AMT-OUT.
    MOVE ' DEPRECIATION TOTALS' TO COMMENT-OUT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    CLOSE CARD-IN, DEPRECIATION-TABFI, COST-CNTR-TABFI,
          PRINT-OUT, FINANCIAL-COST-ALLOCATION.
E-O-J.
    STOP RUN.
```

```
      PGMNAME=WUASSCER
.SYSIN  DD *
  IDENTIFICATION DIVISION.
  PROGRAM-ID. WUASSCER.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FLA 32789 .
  DATE-WRITTEN. SEPT 23 1977.
  DATE-COMPILED. SEPTEMBER 30 1977.
  REMARKS.    THIS PROGRAM EDITS THE SERVICE CONTRACT DATA
              CARDS, TOTALS ALL COSTS, FLAGS ANY DISCREPANCIES.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT  SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
        ASSIGN TO UR-2540R-S-CARDIN
        ACCESS MODE IS SEQUENTIAL.
      SELECT FILE-SORT
        ASSIGN TO UT-3330-S-FILESORT
        ACCESS MODE IS SEQUENTIAL.
      SELECT SORTED-FILE
        ASSIGN TO UT-3330-S-SORTEDFI
        ACCESS MODE IS SEQUENTIAL.
      SELECT FINANCIAL-COST-ALLOCATION
        ASSIGN TO UT-3330-S-FICALFI
        ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
        ASSIGN TO UR-1403-S-PRINTOUT
        ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  CARD-IN
      RECORD CONTAINS 80 CHARACTERS
      LABEL RECORDS ARE OMITTED
      DATA RECORD IS INPUT-CARD.
  01  INPUT-CARD.
      02  ID1 PIC X.
      02  ID2 PIC X(79).
  01  DATE-CARD.
      02  DATE-IN         PIC X(18).
      02  TITLE-IN        PIC X(24).
      02  FILLER          PIC X(38).
  SD  FILE-SORT
      RECORD CONTAINS 80 CHARACTERS
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     DATA RECORD IS SORT-INPUT.
 01  SORT-INPUT.
     02  S-SOURCE-CODE-NO  PIC X.
     02  FILLER            PIC X.
     02  S-CONTRACT-NO     PIC X(8).
     02  FILLER            PIC X(70).
 FD  SORTED-FILE
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS INPUT-RECS.
 01  INPUT-RECS.
     02  SOURCE-CODE-NO PIC X.
     02  FILLER         PIC X.
     02  CONTRACT-NO       PIC X(8).
     02  DATA-ITEMS.
             05   NUMS OCCURS 7 TIMES PIC X(8).
     02  BALANCE           PIC X(8).
     02  FILLER          PIC X(6).
 01  INPUT-RECS-NUMERIC.
     02  FILLER            PIC X(10).
     02  DAT-IN.
         05  NUMS2 OCCURS 7 TIMES PIC S9(6)V99.
     02  BAL-IN            PIC S9(6)V99.
     02  FILLER            PIC X(6).
 FD  FINANCIAL-COST-ALLOCATION
     BLOCK CONTAINS 20 RECORDS
     RECORD CONTAINS 26 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS DISK-OUT.
 01  DISK-OUT.
     05  DISK-ACCT         PIC X(10).
     05  DISK-COST-CNTR    PIC X(4).
     05  DISK-COST-CAT     PIC X(2).
     05  DISK-AMOUNT       PIC S9(8)V99.
 01  FIRST-TWO-RECS.
     05  FILLER            PIC X.
     05  SORT-SEQUENCE     PIC X.
     05  DISK-TITLE        PIC X(24).
 FD  PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
 01  PRINT-LINE          PIC X(133).
WORKING-STORAGE SECTION.
77   LINE-CT             PIC 99 COMP VALUE 1.
77   PAGE-CT             PIC 9(4) COMP VALUE 1.
77   SOURCE-CODE
                             PIC X VALUE '3'.
77   SEARCH-NO
                             PIC XX VALUE SPACES.
77   ACCT-NO1
                             PIC X(10) VALUE '680-30    '.
77   ACCT-NO2
                             PIC X(10) VALUE '680-31    '.
```

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77  TOTAL-ALL             PIC S9(8)V99  COMP VALUE 0.
77  BALANCE-ALL           PIC S9(8)V99  COMP VALUE 0.
77  CONTRACT-NO-HOLD      PIC X(8) VALUE '99999999'.
77  NUMERIC-HOLD          PIC X(8).
77  I                     PIC 9 COMP VALUE 0.
77  J                     PIC 9 COMP VALUE 0.
77  MAX-LINE              PIC 99  COMP VALUE 56.
77  BALANCE-ACCUM         PIC S9(6)V99  COMP VALUE 0.
77  TOTAL-ACCUM           PIC S9(6)V99  COMP VALUE 0.
77  SUB-TOTAL-BALANCE     PIC S9(6)V99  COMP VALUE 0.
77  SUB-TOTAL-TOTAL       PIC S9(6)V99  COMP VALUE 0.
01  ACCUM-ALL-SUBTOTAL.
    05  ACCUM OCCURS 7 TIMES PIC S9(6)V99.
01  ACCUM-ALL-TOTAL.
    05  ACCUM-ALL OCCURS 7 TIMES PIC S9(6)V99.
01  HEADING-1.
    02  FILLER  PIC X(54) VALUE SPACES.
    02  FILLER  PIC X(23) VALUE 'SERVICE CONTRACT REPORT'.
    02  FILLER  PIC X(56) VALUE SPACES.
01  HEADING-2.
    02  FILLER            PIC X VALUE SPACES.
    02  FILLER            PIC X(13) VALUE 'DATE ENDING: '.
    02  DATE-OUT          PIC X(18) VALUE SPACES.
    02  FILLER            PIC X(33) VALUE SPACES.
    02  FILLER            PIC X(3) VALUE 'FOR'.
    02  FILLER            PIC X(53) VALUE SPACES.
    02  FILLER            PIC X(5)  VALUE  'PAGE '.
    02  PAGE-OUT          PIC ZZZ9.
    02  FILLER            PIC X(3)  VALUE SPACES.
01  HEADING-3.
    02  FILLER            PIC X(54) VALUE SPACES.
    02  HEAD              PIC X(24) VALUE SPACES.
    02  FILLER            PIC X(55) VALUE SPACES.
01  HEADING-4.
    02  FILLER            PIC X VALUE SPACES.
    02  FILLER            PIC X(20) VALUE 'CONTRACT #  MATERIAL'.
    02  FILLER            PIC X(5) VALUE SPACES.
    02  FILLER            PIC X(16) VALUE 'LABOR    TRACTOR'.
    02  FILLER            PIC X(3) VALUE SPACES.
    02  FILLER           PIC X(20) VALUE 'COMPRESSOR    TRUCKS'.
    02  FILLER            PIC X(5) VALUE SPACES.
    02  FILLER            PIC X(17) VALUE 'OTHER    OVERHEAD'.
    02  FILLER            PIC X(5)  VALUE SPACES.
    02  FILLER            PIC X(18) VALUE 'BALANCE      TOTAL'.
    02  FILLER            PIC X(8) VALUE SPACES.
    02  FILLER            PIC X(8) VALUE 'COMMENTS'.
    02  FILLER            PIC X(7) VALUE SPACES.
01  DATA-LINE.
    02  FILLER            PIC X VALUE SPACES.
    02  CONTRACT-OUT      PIC X(8).
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     02  FILLER               PIC XX VALUE SPACES.
     02  DATA-BLK OCCURS 7 TIMES.
         05  DAT              PIC -(6).--.
         05  FILLER           PIC XX.
     02  BALANCE-OUT          PIC -(8).--.
     02  TOTAL-OUT            PIC -(8).--.
     02  FILLER               PIC XX VALUE SPACES.
     02  COMMENT              PIC X(20) VALUE SPACES.
     02  FILLER               PIC X VALUE SPACES.
 01  ERROR-LIST.
     02  ERR-LIST-A.
         05  ERR-LIST-1  PIC X(100) VALUE    'INVALID CONTRACT NUM
-                                            'MATERIAL NON NUMERIC
-                                            'LABOR NON NUMERIC
-                                            'TRACTOR NON NUMERIC
-                                           'COMPRESSOR N-NUMERIC'.
         05  ERR-LIST-2  PIC X(100) VALUE    'TRUCKS NON NUMERIC
-                                            'OTHER NON NUMERIC
-                                            'OVERHEAD NON NUMERIC
-                                            'BALANCE NON NUMERIC
-                                           'OUT OF BALANCE      '.
     02  ERR-LIST-B REDEFINES ERR-LIST-A.
             05  ERR-LIST OCCURS 10 TIMES PIC X(20).
 01  ERROR-CODE.
     02  ERR-CODE OCCURS 10 TIMES PIC 9.
 PROCEDURE DIVISION.
 OPEN-FILES.
     OPEN INPUT CARD-IN.
     OPEN OUTPUT PRINT-OUT, FINANCIAL-COST-ALLOCATION.
 READ-CARD.
     READ CARD-IN AT END GO TO CLOSE-FILES.
     MOVE SPACES TO DISK-OUT.
     MOVE DATE-IN TO DATE-OUT, DISK-TITLE.
     WRITE DISK-OUT.
     MOVE SPACES TO DISK-OUT.
     MOVE TITLE-IN TO  HEAD, DISK-TITLE.
     MOVE SOURCE-CODE TO SORT-SEQUENCE.
     WRITE DISK-OUT.
 WRITE-ERROR-HEADING.
     MOVE SPACES TO PRINT-LINE.
     MOVE ' THE FOLLOWING CARDS HAVE A INVALID SOURCE CODE NUMBER'
                          TO PRINT-LINE.
     PERFORM PRINT-LINE-OUT THRU MOVE-SPACES 2 TIMES.
 SORT-RECORDS.
     OPEN OUTPUT SORTED-FILE.
     SORT FILE-SORT ON ASCENDING KEY
         S-CONTRACT-NO
     INPUT PROCEDURE READ-SORT-INPUT THRU
         READ-SORT-INPUT-END
     OUTPUT PROCEDURE WRITE-SORT-OUTPUT THRU
```

```
      WRITE-SORT-OUTPUT-END.
 CLOSE-SORT-FILES.
     CLOSE SORTED-FILE, CARD-IN.
     OPEN INPUT SORTED-FILE.
 HOUSE-KEEPING.
     PERFORM WRITE-HEADINGS.
     MOVE ZEROS TO ERROR-CODE, ACCUM-ALL-SUBTOTAL.
                          ACCUM-ALL-TOTAL.
 READ-INPUT-REC.
     READ SORTED-FILE AT END GO TO CLOSE-FILES.
 DATA-TEST-SECTION.
     IF CONTRACT-NO NOT = TO CONTRACT-NO-HOLD THEN
         MOVE CONTRACT-NO TO CONTRACT-OUT
         ELSE MOVE SPACES TO CONTRACT-OUT.
     MOVE CONTRACT-NO TO CONTRACT-NO-HOLD.
     EXAMINE INPUT-RECS REPLACING ALL ' ' BY '0'.
     IF (CONTRACT-NO NOT NUMERIC)  OR  (CONTRACT-NO = ZERO) THEN
                          MOVE 1 TO ERR-CODE (1).
     PERFORM TEST-FOR-NUMERIC VARYING I FROM 1 BY 1 UNTIL I = 8.
     MOVE BAL-IN TO BALANCE-OUT.
     ADD BAL-IN TO SUB-TOTAL-BALANCE.
     ADD BALANCE-ACCUM TO TOTAL-ACCUM.
     IF BAL-IN NOT = TO BALANCE-ACCUM THEN
         MOVE 1 TO ERR-CODE (10).
     MOVE ZEROS TO BALANCE-ACCUM.
 READ-NEXT-INPUT-REC.
     PERFORM READ-INPUT-REC.
 TOTAL-TEST.
     MOVE CONTRACT-NO TO NUMERIC-HOLD.
     IF NUMERIC-HOLD NOT EQUAL TO CONTRACT-NO-HOLD THEN
     MOVE TOTAL-ACCUM TO TOTAL-OUT,
     ADD TOTAL-ACCUM TO SUB-TOTAL-TOTAL,
     MOVE ZEROS TO TOTAL-ACCUM,
     ELSE MOVE ZEROS TO TOTAL-OUT.
 ERROR-DETECTION.
     MOVE ZEROS TO I.
     IF ERROR-CODE NOT EQUAL TO ZEROS THEN
         PERFORM PRINT-ERRORS THRU PRINT-ERRORS-END UNTIL
         ERROR-CODE = ZEROS
     ELSE MOVE SPACES TO COMMENT,
         MOVE DATA-LINE TO PRINT-LINE,
         PERFORM PRINT-LINE-OUT THRU MOVE-SPACES.
 TOTAL-TEST-END.
     IF TOTAL-OUT NOT = TO ZEROS PERFORM PAGE-OVFLOW.
     GO TO DATA-TEST-SECTION.
 PRINT-ERRORS.
     ADD 1 TO I.
     IF ERR-CODE (I) EQUAL TO 1 THEN
         MOVE ERR-LIST (I) TO COMMENT
         MOVE DATA-LINE TO PRINT-LINE,
        PERFORM PRINT-LINE-OUT THRU MOVE-SPACES,
        MOVE SPACES TO DATA-LINE
        MOVE ZERO TO ERR-CODE (I).
PRINT-ERRORS-END.
    EXIT.
TEST-FOR-NUMERIC.
    ADD 1 I GIVING J.
    MOVE NUMS2 (I) TO DAT (I).
        ADD NUMS2 (I) TO BALANCE-ACCUM, ACCUM (I).
WRITE-HEADINGS.
    MOVE PAGE-CT TO PAGE-OUT.
    MOVE 0 TO LINE-CT.
    WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
    MOVE HEADING-1 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT THRU MOVE-SPACES.
    MOVE HEADING-2 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT THRU MOVE-SPACES.
    MOVE HEADING-3 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT THRU MOVE-SPACES 2 TIMES.
    MOVE HEADING-4 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT THRU MOVE-SPACES 2 TIMES.
    ADD 1 TO PAGE-CT.
PRINT-LINE-OUT.
    WRITE PRINT-LINE BEFORE 1.
    ADD 1 TO LINE-CT.
MOVE-SPACES.
        MOVE SPACES TO PRINT-LINE.
PAGE-OVFLOW.
    IF LINE-CT > MAX-LINE THEN
        PERFORM WRITE-SUB-TOTAL
    PERFORM WRITE-HEADINGS.
PAGE-OVFLOW-END.
    EXIT.
WRITE-SUB-TOTAL.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-OUT-ACCUMS VARYING I FROM 1 BY 1 UNTIL I = 8.
    MOVE 'SUBTOTAL' TO CONTRACT-OUT.
    MOVE SUB-TOTAL-BALANCE TO BALANCE-OUT.
    MOVE SUB-TOTAL-TOTAL TO TOTAL-OUT.
    ADD SUB-TOTAL-BALANCE TO BALANCE-ALL.
    ADD SUB-TOTAL-TOTAL TO TOTAL-ALL.
    MOVE ZEROS TO SUB-TOTAL-BALANCE, SUB-TOTAL-TOTAL,
                        ACCUM-ALL-SUBTOTAL.
    MOVE DATA-LINE TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT THRU MOVE-SPACES.
MOVE-OUT-ACCUMS.
    MOVE ACCUM (I) TO DAT (I).
        ADD ACCUM (I) TO ACCUM-ALL (I).
MOVE-OUT-TOTAL-ACCUMS.
    MOVE ACCUM-ALL (I) TO DAT (I).
```

```
      *
      *    SORT  ROUTINE
      *
       READ-SORT-INPUT.
           READ CARD-IN AT END GO TO READ-SORT-INPUT-END.
           IF ID1 NOT = TO SOURCE-CODE THEN
              WRITE PRINT-LINE FROM INPUT-CARD AFTER ADVANCING 1
           PERFORM MOVE-SPACES
              GO TO READ-SORT-INPUT.
           RELEASE SORT-INPUT FROM INPUT-CARD.
           GO TO READ-SORT-INPUT.
       READ-SORT-INPUT-END.
           EXIT.
       WRITE-SORT-OUTPUT.
           RETURN FILE-SORT RECORD INTO INPUT-RECS
              AT END GO TO WRITE-SORT-OUTPUT-END.
           WRITE INPUT-RECS.
           GO TO WRITE-SORT-OUTPUT.
       WRITE-SORT-OUTPUT-END.
           EXIT.
      *
      *    END SORT ROUTINE
      *
       CLOSE-FILES.
           MOVE ZEROS TO CONTRACT-NO-HOLD.
           PERFORM TOTAL-TEST THRU ERROR-DETECTION.
           PERFORM WRITE-SUB-TOTAL.
           PERFORM PRINT-LINE-OUT 2 TIMES.
           MOVE 'TOTAL    ' TO CONTRACT-OUT.
           PERFORM MOVE-OUT-TOTAL-ACCUMS VARYING I
                          FROM 1 BY 1 UNTIL I = 8.
           MOVE BALANCE-ALL TO BALANCE-OUT.
           MOVE TOTAL-ALL TO TOTAL-OUT.
           MOVE DATA-LINE TO PRINT-LINE.
           PERFORM PRINT-LINE-OUT.
       WRITE-DISK-RECORDS.
           MOVE SPACES TO DISK-OUT.
           MOVE ACCT-NO1 TO DISK-ACCT.
           ADD ACCUM-ALL (3)
               ACCUM-ALL (4)
               ACCUM-ALL (5)
               ACCUM-ALL (6) GIVING DISK-AMOUNT.
           WRITE DISK-OUT.
           MOVE ACCT-NO2 TO DISK-ACCT.
           MOVE ACCUM-ALL (7) TO DISK-AMOUNT.
           WRITE DISK-OUT.
           CLOSE CARD-IN, SORTED-FILE, PRINT-OUT,
              FINANCIAL-COST-ALLOCATION.
       STOP-RUN.
           STOP RUN.
       PGMNAME=WUASMTER
.SYSIN  DD *
   IDENTIFICATION DIVISION.
   PROGRAM-ID. WUASMTER.
   AUTHOR. ACT SYSTEMS, INC
           SUITE 200
           807 W MORSE BLVD
           WINTER PARK, FLA 32789 .
   DATE-WRITTEN. OCT 5 1977.
   DATE-COMPILED.  OCT 7 1977.
   REMARKS.     THIS PROGRAM EDITS THE MISCELLANEOUS TRANSACTIONS
                CARDS, TOTALS ALL COSTS, FLAGS ANY DISCREPANCIES.
   ENVIRONMENT DIVISION.
   CONFIGURATION SECTION.
   SOURCE-COMPUTER. IBM-370.
   OBJECT-COMPUTER. IBM-370.
   SPECIAL-NAMES.
       C01 IS NEW-PAGE.
   INPUT-OUTPUT  SECTION.
   FILE-CONTROL.
       SELECT CARD-IN
         ASSIGN TO UR-2540R-S-CARDIN
         ACCESS MODE IS SEQUENTIAL.
       SELECT FILE-SORT
         ASSIGN TO UT-3330-S-FILESORT
         ACCESS MODE IS SEQUENTIAL.
       SELECT SORTED-FILE
         ASSIGN TO UT-3330-S-SORTEDFI
         ACCESS MODE IS SEQUENTIAL.
       SELECT PRINT-OUT
         ASSIGN TO UR-1403-S-PRINTOUT
         ACCESS MODE IS SEQUENTIAL.
       SELECT FINANCIAL-ACCT-TABFI
           ASSIGN TO DA-3330-I-FATABFI
           ACCESS MODE IS RANDOM
           NOMINAL KEY IS FA-NOMINAL
           RECORD KEY IS FA-NUMBER.
       SELECT COST-CNTR-TABFI
           ASSIGN TO DA-3330-I-CCTABFI
           ACCESS MODE IS RANDOM
           NOMINAL KEY IS CC-NOMINAL
           RECORD KEY IS CC-NUMBER.
       SELECT SPECIAL-ACCT-TABFI
           ASSIGN TO DA-3330-S-SATABFI
           ACCESS MODE IS SEQUENTIAL.
       SELECT FINANCIAL-COST-ALLOCATION
           ASSIGN TO UT-3330-S-FICALFI
           ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
```

```
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     02  ID1 PIC X.
     02  ID2 PIC X(79).
 01  DATE-CARD.
     02  DATE-IN        PIC X(18).
     02  TITLE-IN       PIC X(24).
     02  FILLER         PIC X(38).
 SD  FILE-SORT
     RECORD CONTAINS 80 CHARACTERS
     DATA RECORD IS SORT-INPUT.
 01  SORT-INPUT.
     02  S-SOURCE-CODE-NO PIC X.
     02  FILLER           PIC X.
     02  S-ENTRY-NO       PIC X(3).
     02  FILLER           PIC X.
     02  S-ACCT-NO        PIC X(10).
     02  FILLER           PIC X(64).
 FD  SORTED-FILE
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS INPUT-RECS.
 01  INPUT-RECS.
     02  SOURCE-CODE-NO   PIC X.
     02  FILLER           PIC X.
     02  ENTRY-NO         PIC X(3).
     02  FILLER           PIC X.
     02  ACCT-IN          PIC X(10).
     02  FILLER           PIC X.
     02  COST-CTR-IN.
         05  CC-FIRST-2-DIGITS  PIC XX.
         05  CC-SECOND-2-DIGITS PIC XX.
     02  FILLER           PIC X.
     02  INPUT-AMTS.
         05  AMOUNT-IN    PIC X(10).
         05  AMT-IN REDEFINES AMOUNT-IN PIC S9(8)V99.
     02  FILLER           PIC X(48).
 FD  PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
 01  PRINT-LINE         PIC X(133).
 FD  COST-CNTR-TABFI
     BLOCK CONTAINS 8 RECORDS
     RECORD CONTAINS 30 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS CC-REC.
```

```
01  CC-REC.
    02  CC-NUMBER           PIC 9(4).
    02  CC-NAME             PIC X(13) OCCURS 2 TIMES.
FD  FINANCIAL-ACCT-TABFI
    BLOCK CONTAINS 8 RECORDS
    RECORD CONTAINS 58 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS FA-REC.
01  FA-REC.
    05  FA-NUMBER           PIC X(10).
    05  FA-NAME             PIC X(20) OCCURS 2 TIMES.
    05  FILLER              PIC X(8).
FD  SPECIAL-ACCT-TABFI
    BLOCK CONTAINS 0 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS COST-CENTERS.
01  COST-CENTERS.
    05  RECORD-COUNT.
        10  NO-OF-RECS      PIC 9(4).
        10  FILLER          PIC X(18).
    05  COST-CNTRS OCCURS 1 TO 99 TIMES
        DEPENDING ON NO-OF-RECS
        ASCENDING KEY IS CC-SIZE-2
        INDEXED BY CC.
        10  CC-SIZE-2       PIC X(2).
        10  CC-SIZE-4       PIC X(4).
        10  FILLER          PIC X(16).
FD  FINANCIAL-COST-ALLOCATION
    BLOCK CONTAINS 20 RECORDS
    RECORD CONTAINS 26 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS DISK-OUT.
01  DISK-OUT.
    05  DISK-ACCT           PIC X(10).
    05  DISK-COST-CNTR      PIC X(4).
    05  DISK-COST-CAT       PIC X(2).
    05  DISK-AMOUNT         PIC S9(8)V99.
01  FIRST-TWO-RECS.
    05  FILLER              PIC X.
    05  SORT-SEQUENCE       PIC X.
    05  DISK-TITLE          PIC X(24).
WORKING-STORAGE SECTION.
77  SOURCE-CODE             PIC X VALUE '5'.
77  SEARCH-NO               PIC XX VALUE SPACES.
77  LINE-CT                 PIC 99 COMP VALUE 0.
77  PAGE-CT                 PIC 9(4) COMP VALUE 0.
77  CR-AMT-ACCUM            PIC S9(8)V99 COMP VALUE ZERO.
77  DB-AMT-ACCUM            PIC S9(8)V99 COMP VALUE ZERO.
77  BALANCE-AMOUNTS         PIC S9(8)V99 COMP VALUE ZERO.
77  CR-TOTAL                PIC S9(8)V99 COMP VALUE ZERO.
```

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 77  DB-TOTAL              PIC S9(8)V99 COMP VALUE ZERO.
 77  ENTRY-NO-HOLD         PIC X(3) VALUE ZEROS.
 77  ACCT-HOLD             PIC X(10) VALUE ZERO.
 77  I                     PIC 9 COMP VALUE 0.
 77  MAX-LINE              PIC 99 COMP VALUE 56.
 77  FA-NOMINAL            PIC X(10).
 77  CC-NOMINAL            PIC X(4).
 01  HEADING-1.
     02  FILLER            PIC X(49) VALUE SPACES.
     02  FILLER            PIC X(33) VALUE 'MISCELLANEOUS TRANSACTI
-                                          'ONS REPORT'.
     02  FILLER            PIC X(51) VALUE SPACES.
 01  HEADING-2.
     02  FILLER            PIC X VALUE SPACES.
     02  FILLER            PIC X(13) VALUE 'DATE ENDING: '.
     02  DATE-OUT          PIC X(18) VALUE SPACES.
     02  FILLER            PIC X(33) VALUE SPACES.
     02  FILLER            PIC X(3) VALUE 'FOR'.
     02  FILLER            PIC X(53) VALUE SPACES.
     02  FILLER            PIC X(5)  VALUE  'PAGE '.
     02  PAGE-OUT          PIC ZZZ9.
     02  FILLER            PIC X(3) VALUE SPACES.
 01  HEADING-3.
     02  FILLER            PIC X(54) VALUE SPACES.
     02  TITLE-OUT         PIC X(24) VALUE SPACES.
     02  FILLER            PIC X(55) VALUE SPACES.
 01  HEADING-4.
     02  FILLER            PIC X(2)  VALUE SPACES.
     02  FILLER            PIC X(12) VALUE 'ENTRY NUMBER'.
     02  FILLER            PIC X(5)  VALUE SPACES.
     02  FILLER            PIC X(14) VALUE 'ACCOUNT NUMBER'.
     02  FILLER            PIC X(5)  VALUE SPACES.
     02  FILLER            PIC X(11) VALUE 'COST CENTER'.
     02  FILLER            PIC X(9)  VALUE SPACES.
     02  FILLER            PIC X(6) VALUE 'AMOUNT'.
     02  FILLER            PIC X(6)  VALUE SPACES.
     02  FILLER            PIC X(12) VALUE 'CREDIT TOTAL'.
     02  FILLER            PIC X(6)  VALUE SPACES.
     02  FILLER            PIC X(11) VALUE 'DEBIT TOTAL'.
     02  FILLER            PIC X(14) VALUE SPACES.
     02  FILLER            PIC X(7)  VALUE 'COMMENT'.
     02  FILLER            PIC X(13) VALUE SPACES.
 01  DATA-LINE.
     02  FILLER            PIC X(7).
     02  ENTRY-NO-OUT      PIC X(3).
     02  FILLER            PIC X(12).
     02  ACCT-OUT          PIC X(10).
     02  FILLER            PIC X(10).
     02  COST-CTR-OUT      PIC X(4).
     02  FILLER            PIC X(8).
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           02  AMOUNT-OUT         PIC Z(8).ZZCR.
           02  FILLER             PIC XX.
           02  CR-TOTAL-OUT       PIC Z(8).ZZCR.
           02  FILLER             PIC X(5).
           02  DB-TOTAL-OUT       PIC -(8).--.
           02  FILLER             PIC X(7).
           02  COMMENT            PIC X(25) VALUE SPACES.
           02  FILLER             PIC X(3).
       01  ERROR-CODE.
           02  ERR-CODE OCCURS 8 TIMES PIC 9.
       01  ERROR-LIST.
           02  ERR-LIST-A.
               05  ERR-LIST1 PIC X(100) VALUE 'ACCOUNT NUMBER NOT FOUND
      -                                        'COST CENTER NOT NUMERIC
      -                                        'COST CENTER NOT FOUND
      -                                       'AMOUNT NOT NUMERIC
               05  ERR-LIST2 PIC X(100) VALUE 'TOTAL AMOUNT NOT NUMERIC
      -                                        'CR AMTS NOT = TO CR TOTAL
      -                                        'DB AMTS NOT = TO DB TOATL
      -                                       'TOTALS DO NOT BALANCE    '.
           02  ERR-LIST-B REDEFINES ERR-LIST-A.
               05  ERR-LIST OCCURS 8 TIMES PIC X(25).
       PROCEDURE DIVISION.
       OPEN-FILES.
           OPEN INPUT CARD-IN.
           OPEN OUTPUT PRINT-OUT, SORTED-FILE,
                       FINANCIAL-COST-ALLOCATION.
       READ-TITLE-CARD.
           READ CARD-IN AT END GO TO WRITE-FINAL-TOTALS.
           MOVE SPACES TO DISK-OUT.
           MOVE DATE-IN TO DATE-OUT, DISK-TITLE.
           WRITE DISK-OUT.
           MOVE SPACES TO DISK-OUT.
           MOVE TITLE-IN TO TITLE-OUT, DISK-TITLE.
           MOVE SOURCE-CODE TO SORT-SEQUENCE.
           WRITE DISK-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
           MOVE ' THE FOLLOWING CARDS HAVE A INVALID SOURCE CODE'
               TO PRINT-LINE.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
       SORT-RECORDS.
           SORT FILE-SORT ON ASCENDING KEY
               S-ENTRY-NO
               S-ACCT-NO
           INPUT PROCEDURE READ-SORT-INPUT
               THRU READ-SORT-INPUT-END
           OUTPUT PROCEDURE WRITE-SORT-OUTPUT
               THRU WRITE-SORT-OUTPUT-END.
       CLOSE-SORT-FILES.
```

```
    CLOSE SORTED-FILE, CARD-IN.
    OPEN INPUT SORTED-FILE, FINANCIAL-ACCT-TABFI,
               COST-CNTR-TABFI, SPECIAL-ACCT-TABFI.
HOUSEKEEPING.
    MOVE ZEROS TO ERROR-CODE.
    READ SPECIAL-ACCT-TABFI AT END
        MOVE 'COST CENTER TABLE CONTAINS NO DATA' TO
        PRINT-LINE,
        PERFORM PRINT-LINE-OUT
        GO TO CLOSE-FILES.
WRITE-HEADINGS.
    MOVE 0 TO LINE-CT.
    ADD 1 TO PAGE-CT.
    MOVE PAGE-CT TO PAGE-OUT.
    PERFORM MOVE-SPACES.
    WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
    MOVE HEADING-1 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-2 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-3 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    MOVE HEADING-4 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
READ-RECORDS.
    READ SORTED-FILE AT END GO TO WRITE-FINAL-TOTALS.
EDIT-RECORDS.
    EXAMINE INPUT-AMTS REPLACING ALL SPACES BY ZEROS.
    EXAMINE COST-CTR-IN REPLACING ALL SPACES BY ZEROS.
    IF ENTRY-NO NOT = TO ENTRY-NO-HOLD THEN
        MOVE ENTRY-NO TO ENTRY-NO-HOLD, ENTRY-NO-OUT
    ELSE MOVE SPACES TO ENTRY-NO-OUT.
    IF ACCT-IN NOT = ACCT-HOLD THEN
        MOVE ACCT-IN TO ACCT-HOLD, ACCT-OUT, FA-NOMINAL.
        READ FINANCIAL-ACCT-TABFI INVALID KEY
            MOVE 1 TO ERR-CODE (1).
    MOVE ACCT-IN TO DISK-ACCT, ACCT-OUT.
    IF COST-CTR-IN NOT NUMERIC
        MOVE 1 TO ERR-CODE (2)
        MOVE SPACES TO COST-CTR-IN, DISK-COST-CNTR.
    IF COST-CTR-IN = TO ZEROS THEN
        MOVE SPACES TO COST-CTR-IN, DISK-COST-CNTR
    ELSE PERFORM FIND-COST-CNTR.
    IF AMOUNT-IN > 0 THEN
        ADD AMT-IN TO DB-AMT-ACCUM
    ELSE ADD AMT-IN TO CR-AMT-ACCUM.
    MOVE AMT-IN TO AMOUNT-OUT, DISK-AMOUNT.
WRITE-LINE-OUT.
```

```
    IF ERROR-CODE NOT = ZERO THEN
        PERFORM MOVE-IN-ERRORS VARYING I
            FROM 1 BY 1 UNTIL ERROR-CODE = ZEROS
        ELSE MOVE DATA-LINE TO PRINT-LINE
        PERFORM PRINT-LINE-OUT.
WRITE-DISK.
        WRITE DISK-OUT
        MOVE SPACES TO DISK-OUT.
    PERFORM READ-RECORDS.
    IF ENTRY-NO NOT = ENTRY-NO-HOLD THEN
        PERFORM WRITE-SUBS.
    IF LINE-CT > MAX-LINE THEN
        PERFORM WRITE-HEADINGS.
    GO TO EDIT-RECORDS.
FIND-COST-CNTR.
    IF CC-FIRST-2-DIGITS NOT = ZEROS THEN
        MOVE COST-CTR-IN TO CC-NOMINAL
        READ COST-CNTR-TABF1 INVALID KEY
        MOVE 1 TO ERR-CODE (3)
    ELSE PERFORM SEARCH-CC.
    MOVE COST-CTR-IN TO DISK-COST-CNTR.
MOVE-IN-ERRORS.
    IF ERR-CODE (I) NOT = ZEROS THEN
        MOVE ERR-LIST (I) TO COMMENT
        MOVE DATA-LINE TO PRINT-LINE
        PERFORM PRINT-LINE-OUT
        MOVE SPACES TO DATA-LINE
        MOVE ZERO TO ERR-CODE (I).
PAGE-OVFLOW.
    IF LINE-CT NOT < MAX-LINE THEN
    PERFORM WRITE-SUBS
    PERFORM WRITE-HEADINGS.
PAGE-OVFLOW-END.
    EXIT.
SEARCH-CC.
    MOVE CC-SECOND-2-DIGITS TO SEARCH-NO.
    SET CC TO 1.
    SEARCH ALL COST-CNTRS AT END
        MOVE 1 TO ERR-CODE (3)
    WHEN CC-SIZE-2 (CC) = TO SEARCH-NO
        MOVE CC-SIZE-4 (CC) TO COST-CTR-IN.
WRITE-SUBS.
    MOVE SPACES TO DATA-LINE.
    MOVE CR-AMT-ACCUM TO CR-TOTAL-OUT.
    MOVE DB-AMT-ACCUM TO DB-TOTAL-OUT.
    ADD CR-AMT-ACCUM DB-AMT-ACCUM GIVING BALANCE-AMOUNTS.
    IF BALANCE-AMOUNTS NOT = 0 THEN
        MOVE ' CREDITS & DEBITS NOT =  ' TO COMMENT
    ELSE MOVE SPACES TO COMMENT.
    PERFORM WRITE-LINE-OUT.
```

```
      ADD CR-AMT-ACCUM TO CR-TOTAL.
      ADD DB-AMT-ACCUM TO DB-TOTAL.
      MOVE ZEROS TO CR-AMT-ACCUM,
                    DB-AMT-ACCUM.
      MOVE SPACES TO DATA-LINE.
  MOVE-SPACES.
      MOVE SPACES TO PRINT-LINE.
  PRINT-LINE-OUT.
      WRITE PRINT-LINE BEFORE ADVANCING 1.
      ADD 1 TO LINE-CT.
*     SORT  ROUTINE
*
  READ-SORT-INPUT.
      READ CARD-IN AT END GO TO READ-SORT-INPUT-END.
      IF 101 NOT = TO SOURCE-CODE THEN
          WRITE PRINT-LINE FROM INPUT-CARD AFTER ADVANCING 1
      PERFORM MOVE-SPACES
          GO TO READ-SORT-INPUT.
      RELEASE SORT-INPUT FROM INPUT-CARD.
      GO TO READ-SORT-INPUT.
  READ-SORT-INPUT-END.
      EXIT.
  WRITE-SORT-OUTPUT.
      RETURN FILE-SORT RECORD INTO INPUT-RECS
          AT END GO TO WRITE-SORT-OUTPUT-END.
      WRITE INPUT-RECS.
      GO TO WRITE-SORT-OUTPUT.
  WRITE-SORT-OUTPUT-END.
      EXIT.
*
*     END SORT ROUTINE
*
  WRITE-FINAL-TOTALS.
      PERFORM WRITE-SUBS.
      PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
      PERFORM PRINT-LINE-OUT 2 TIMES.
      MOVE SPACES TO DATA-LINE.
      MOVE CR-TOTAL TO CR-TOTAL-OUT.
      MOVE DB-TOTAL TO DB-TOTAL-OUT.
      MOVE DATA-LINE TO PRINT-LINE.
      PERFORM PRINT-LINE-OUT.
  CLOSE-FILES.
      CLOSE SORTED-FILE, FINANCIAL-ACCT-TABFI,
          SPECIAL-ACCT-TABFI, FINANCIAL-COST-ALLOCATION,
          COST-CNTR-TABFI, PRINT-OUT.
  E-O-J.
      STOP RUN.
      PGMNAME=WUASPAER
.SYSIN  DD *
  IDENTIFICATION DIVISION.
  PROGRAM-ID. WUASPAER.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FLA 32789 .
  DATE-WRITTEN. OCT 5 1977.
  DATE-COMPILED.  OCT 6 1977.
  REMARKS.     THIS PROGRAM EDITS THE PAYMENT AUTHORIZATION DATA
               CARDS, TOTALS ALL COSTS, FLAGS ANY DISCREPANCIES.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT  SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
        ASSIGN TO UR-2540R-S-CARDIN
        ACCESS MODE IS SEQUENTIAL.
      SELECT FILE-SORT
        ASSIGN TO UT-3330-S-FILESORT
        ACCESS MODE IS SEQUENTIAL.
      SELECT SORTED-FILE
        ASSIGN TO UT-3330-S-SORTEDFI
        ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
        ASSIGN TO UR-1403-S-PRINTOUT
        ACCESS MODE IS SEQUENTIAL.
      SELECT FINANCIAL-ACCT-TABFI
          ASSIGN TO DA-3330-I-FATABFI
          ACCESS MODE IS RANDOM
          NOMINAL KEY IS FA-NOMINAL
          RECORD KEY IS FA-NUMBER.
      SELECT COST-CNTR-TABFI
          ASSIGN TO DA-3330-I-CCTABFI
          ACCESS MODE IS RANDOM
          NOMINAL KEY IS CC-NOMINAL
          RECORD KEY IS CC-NUMBER.
      SELECT SPECIAL-ACCT-TABFI
          ASSIGN TO DA-3330-S-SATABFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT FINANCIAL-COST-ALLOCATION
          ASSIGN TO UT-3330-S-FICALFI
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
```

```
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     02  ID1 PIC X.
     02  ID2 PIC X(79).
 01  DATE-CARD.
     02  DATE-IN        PIC X(18).
     02  TITLE-IN       PIC X(24).
     02  FILLER         PIC X(38).
 SD  FILE-SORT
     RECORD CONTAINS 80 CHARACTERS
     DATA RECORD IS SORT-INPUT.
 01  SORT-INPUT.
     02  S-SOURCE-CODE-NO PIC X.
     02  FILLER           PIC X.
     02  S-PAY-AUTH       PIC X(10).
     02  FILLER           PIC X(68).
 FD  SORTED-FILE
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS INPUT-RECS.
 01  INPUT-RECS.
     02  SOURCE-CODE-NO   PIC X.
     02  FILLER           PIC X.
     02  PAY-AUTH-IN      PIC X(10).
     02  FILLER           PIC X.
     02  ACCT-IN          PIC X(10).
     02  FILLER           PIC X.
     02  COST-CTR-IN.
         05  CC-FIRST-2-DIGITS  PIC XX.
         05  CC-SECOND-2-DIGITS PIC XX.
     02  FILLER           PIC X.
     02  AMOUNT-IN        PIC X(10).
     02  AMT-IN REDEFINES AMOUNT-IN PIC S9(8)V99.
     02  FILLER           PIC X.
     02  TOTAL-IN         PIC X(10).
     02  TOT-IN REDEFINES TOTAL-IN PIC S9(8)V99.
     02  FILLER           PIC X(30).
 FD  PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
 01  PRINT-LINE           PIC X(133).
 FD  COST-CNTR-TABFI
     BLOCK CONTAINS 8 RECORDS
     RECORD CONTAINS 30 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS CC-REC.
 01  CC-REC.
     02  CC-NUMBER          PIC 9(4).
     02  CC-NAME            PIC X(13) OCCURS 2 TIMES.
 FD  FINANCIAL-ACCT-TABFI
     BLOCK CONTAINS 8 RECORDS
     RECORD CONTAINS 58 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS FA-REC.
 01  FA-REC.
     05  FA-NUMBER          PIC X(10).
     05  FA-NAME            PIC X(20) OCCURS 2 TIMES.
     05  FILLER             PIC X(8).
 FD  SPECIAL-ACCT-TABFI
     BLOCK CONTAINS 0 RECORDS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS COST-CENTERS.
 01  COST-CENTERS.
     05  RECORD-COUNT.
         10  NO-OF-RECS     PIC 9(4).
         10  FILLER         PIC X(18).
     05  COST-CNTRS OCCURS 1 TO 99 TIMES
         DEPENDING ON NO-OF-RECS
         ASCENDING KEY IS CC-SIZE-2
         INDEXED BY CC.
         10  CC-SIZE-2      PIC X(2).
         10  CC-SIZE-4      PIC X(4).
         10  FILLER         PIC X(16).
 FD  FINANCIAL-COST-ALLOCATION
     BLOCK CONTAINS 20 RECORDS
     RECORD CONTAINS 26 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS DISK-OUT.
 01  DISK-OUT.
     05  DISK-ACCT          PIC X(10).
     05  DISK-COST-CNTR     PIC X(4).
     05  DISK-COST-CAT      PIC X(2).
     05  DISK-AMOUNT        PIC S9(8)V99.
 01  FIRST-TWO-RECS.
     05  FILLER             PIC X.
     05  SORT-SEQUENCE      PIC X.
     05  DISK-TITLE         PIC X(24).
 WORKING-STORAGE SECTION.
 77  SOURCE-CODE            PIC X VALUE '4'.
 77  SEARCH-NO              PIC XX VALUE SPACES.
 77  LINE-CT                PIC 99 COMP VALUE 0.
 77  PAGE-CT                PIC 9(4) COMP VALUE 1.
 77  AMT-ACCUM              PIC S9(8)V99  COMP VALUE 0.
 77  AMT-SUB-TOTAL          PIC S9(8)V99  COMP VALUE 0.
 77  TOTAL-SUB-TOTAL        PIC S9(8)V99  COMP VALUE 0.
 77  TOTAL-HOLD             PIC S9(8)V99  COMP VALUE 0.
 77  TOTAL-ALL               PIC S9(10)V99 COMP VALUE 0.
 77  AMT-ALL                 PIC S9(10)V99 COMP VALUE 0.
 77  PAY-AUTH-HOLD           PIC X(10) VALUE SPACES.
 77  NUMERIC-HOLD            PIC X(10) VALUE SPACES.
 77  I                       PIC 9 COMP VALUE 0.
 77  MAX-LINE                PIC 99 COMP VALUE 50.
 77  FA-NOMINAL              PIC X(10).
 77  CC-NOMINAL              PIC X(4).
 77  PRINT-PAY-AUTH-FLAG     PIC X VALUE '1'.
     88  FLAG-ON             VALUE '1'.
     88  FLAG-OFF            VALUE '0'.
 01  HEADING-1.
     02  FILLER              PIC X(51) VALUE SPACES.
     02  FILLER              PIC X(28) VALUE  'PAYMENT AUTHORIZATION
-                                            'REPORT'.
     02  FILLER              PIC X(53) VALUE SPACES.
 01  HEADING-2.
     02  FILLER              PIC X VALUE SPACES.
     02  FILLER PIC X(13)    VALUE 'DATE ENDING: '.
     02  DATE-OUT            PIC X(18) VALUE SPACES.
     02  FILLER              PIC X(33) VALUE SPACES.
     02  FILLER              PIC X(3) VALUE 'FOR'.
     02  FILLER              PIC X(53) VALUE SPACES.
     02  FILLER              PIC X(5)  VALUE  'PAGE '.
     02  PAGE-OUT            PIC ZZZ9.
     02  FILLER              PIC X(3) VALUE SPACES.
     02  FILLER              PIC X(4)  VALUE SPACES.
 01  HEADING-3.
     02  FILLER              PIC X(54) VALUE SPACES.
     02  TITLE-OUT           PIC X(24) VALUE SPACES.
     02  FILLER              PIC X(55) VALUE SPACES.
 01  HEADING-4.
     02  FILLER              PIC X(17) VALUE SPACES.
     02  FILLER              PIC X(15) VALUE 'PAYMENT AUTH. #'.
     02  FILLER              PIC X(8) VALUE SPACES.
     02  FILLER              PIC X(9) VALUE 'ACCOUNT #'.
     02  FILLER              PIC X(5) VALUE SPACES.
     02  FILLER              PIC X(11) VALUE 'COST CENTER'.
     02  FILLER              PIC X(9) VALUE SPACES.
     02  FILLER              PIC X(6) VALUE 'AMOUNT'.
     02  FILLER              PIC X(11) VALUE SPACES.
     02  FILLER              PIC X(5) VALUE 'TOTAL'.
     02  FILLER              PIC X(11) VALUE SPACES.
     02  FILLER              PIC X(8) VALUE 'COMMENTS'.
     02  FILLER              PIC X(18) VALUE SPACES.
 01  DATA-LINE.
     02  FILLER              PIC X(20) VALUE SPACES.
     02  PAY-AUTH-OUT        PIC X(10).
     02  FILLER              PIC X(10) VALUE SPACES.
     02  ACCT-OUT            PIC X(10).
     02  FILLER           PIC X(8)  VALUE SPACES.
     02  COST-CTR-OUT     PIC X(4).
     02  FILLER           PIC X(8)  VALUE SPACES.
     02  AMOUNT-OUT       PIC -(8).--.
     02  FILLER           PIC X(5) VALUE SPACES.
     02  TOTAL-OUT        PIC -(8).--.
     02  FILLER           PIC X(5) VALUE SPACES.
     02  COMMENT          PIC X(25) VALUE SPACES.
     02  FILLER           PIC X(6)  VALUE SPACES.
 01  ERROR-CODE.
     02  ERR-CODE OCCURS 7 TIMES PIC 9.
 01  ERROR-LIST.
     02  ERR-LIST-A.
         05  ERR-LIST1 PIC X(75) VALUE  'ACCOUNT NUMBER NOT FOUND
-                                       'PAY AUTHORTY NOT NUMERIC
-                                      'COST CENTER NOT NUMERIC  '.
         05  ERR-LIST2 PIC X(100) VALUE 'COST CENTER NOT FOUND
-                                       'AMOUNT NOT NUMERIC
-                                       'TOTAL NOT NUMERIC
-                                      'AMOUNTS & TOTAL NOT EQUAL'.
     02  ERR-LIST-B REDEFINES ERR-LIST-A.
         05  ERR-LIST OCCURS 7 TIMES PIC X(25).
 01  SUB-LINE.
     02  FILLER           PIC X(5)  VALUE SPACES.
     02  S-T-COMMENT      PIC X(11) VALUE SPACES.
     02  FILLER           PIC X(52) VALUE SPACES.
     02  AMT-ALL-OUT      PIC -(10).--.
     02  FILLER           PIC X(3) VALUE SPACES.
     02  TOTAL-ALL-OUT    PIC -(10).--.
     02  FILLER           PIC X(36) VALUE SPACES.
 PROCEDURE DIVISION.
 OPEN-FILES.
     OPEN INPUT CARD-IN.
     OPEN OUTPUT PRINT-OUT, SORTED-FILE,
                 FINANCIAL-COST-ALLOCATION.
 READ-TITLE-CARD.
     READ CARD-IN AT END GO TO WRITE-FINAL-TOTALS.
     MOVE SPACES TO DISK-OUT.
     MOVE DATE-IN TO DATE-OUT, DISK-TITLE.
     WRITE DISK-OUT.
     MOVE SPACES TO DISK-OUT.
     MOVE TITLE-IN TO TITLE-OUT, DISK-TITLE.
     MOVE SOURCE-CODE TO SORT-SEQUENCE.
     WRITE DISK-OUT.
     MOVE SPACES TO PRINT-LINE.
     MOVE ' THE FOLLOWING CARDS HAVE A INVALID SOURCE CODE'
         TO PRINT-LINE.
     PERFORM PRINT-LINE-OUT.
     PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
 SORT-RECORDS.
```

```
        SORT FILE-SORT ON ASCENDING KEY
            S-PAY-AUTH
        INPUT PROCEDURE READ-SORT-INPUT
            THRU READ-SORT-INPUT-END
        OUTPUT PROCEDURE WRITE-SORT-OUTPUT
            THRU WRITE-SORT-OUTPUT-END.
    CLOSE-SORT-FILES.
        CLOSE SORTED-FILE, CARD-IN.
        OPEN INPUT SORTED-FILE, FINANCIAL-ACCT-TABFI,
                    COST-CNTR-TABFI, SPECIAL-ACCT-TABFI.
    HOUSEKEEPING.
        MOVE ZEROS TO ERROR-CODE.
        READ SPECIAL-ACCT-TABFI AT END
            MOVE 'COST CENTER TABLE CONTAINS NO DATA' TO
            PRINT-LINE,
            PERFORM PRINT-LINE-OUT
            GO TO CLOSE-FILES.
    WRITE-HEADINGS.
        MOVE 0 TO LINE-CT.
        MOVE PAGE-CT TO PAGE-OUT.
        PERFORM MOVE-SPACES.
        WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
        MOVE HEADING-1 TO PRINT-LINE.
        PERFORM PRINT-LINE-OUT.
        MOVE HEADING-2 TO PRINT-LINE.
        PERFORM PRINT-LINE-OUT.
        MOVE HEADING-3 TO PRINT-LINE.
        PERFORM PRINT-LINE-OUT.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
        MOVE HEADING-4 TO PRINT-LINE.
        PERFORM PRINT-LINE-OUT.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
        ADD 1 TO PAGE-CT.
    READ-RECORDS.
        READ SORTED-FILE AT END GO TO WRITE-FINAL-TOTALS.
    EDIT-RECORDS.
        MOVE ACCT-IN TO ACCT-OUT, FA-NOMINAL. DISK-ACCT.
        READ FINANCIAL-ACCT-TABFI INVALID KEY
            MOVE 1 TO ERR-CODE (1).
        MOVE PAY-AUTH-IN TO PAY-AUTH-HOLD.
        IF FLAG-ON MOVE PAY-AUTH-IN TO PAY-AUTH-OUT
            ELSE MOVE SPACES TO PAY-AUTH-OUT.
        MOVE COST-CTR-IN TO COST-CTR-OUT.
        EXAMINE INPUT-RECS REPLACING ALL ' ' BY '0'.
        IF PAY-AUTH-IN NOT NUMERIC MOVE 1 TO ERR-CODE (2).
        IF COST-CTR-IN NOT NUMERIC MOVE 1 TO ERR-CODE (3)
            MOVE ZEROS TO COST-CTR-IN.
        IF COST-CTR-IN NOT = ZEROS THEN
            PERFORM FIND-COST-CNTR.
        MOVE AMT-IN TO AMOUNT-OUT, DISK-AMOUNT.
        ADD AMT-IN TO AMT-ACCUM, AMT-SUB-TOTAL.
    IF TOT-IN NOT = TO 0  THEN MOVE TOT-IN TO TOTAL-HOLD,
        ADD TOTAL-HOLD TO TOTAL-SUB-TOTAL.
    MOVE 0 TO TOTAL-OUT.
READ-NEXT-REC.
    PERFORM READ-RECORDS.
CHECK-NEXT-REC.
    MOVE PAY-AUTH-IN TO NUMERIC-HOLD.
    IF NUMERIC-HOLD = TO PAY-AUTH-HOLD THEN
                          MOVE '0' TO PRINT-PAY-AUTH-FLAG
                          GO TO WRITE-LINE-OUT.
    MOVE '1' TO PRINT-PAY-AUTH-FLAG.
        MOVE TOTAL-HOLD TO TOTAL-OUT.
        IF TOTAL-HOLD NOT = TO AMT-ACCUM THEN
                          MOVE 1 TO ERR-CODE (7).
        MOVE ZEROS TO AMT-ACCUM, TOTAL-HOLD.
WRITE-LINE-OUT.
    IF ERROR-CODE NOT = TO ZEROS THEN
        PERFORM MOVE-IN-ERRORS VARYING I
            FROM 1 BY 1 UNTIL ERROR-CODE = ZEROS
        ELSE MOVE DATA-LINE TO PRINT-LINE
        PERFORM PRINT-LINE-OUT
        WRITE DISK-OUT
        MOVE SPACES TO DISK-OUT.
    IF FLAG-ON THEN
        PERFORM PAGE-OVFLOW THRU PAGE-OVFLOW-END.
    GO TO EDIT-RECORDS.
FIND-COST-CNTR.
    IF CC-FIRST-2-DIGITS NOT = ZEROS THEN
        MOVE COST-CTR-IN TO CC-NOMINAL
        READ COST-CNTR-TABLE INVALID KEY
            MOVE 1 TO ERR-CODE (4)
        ELSE PERFORM SEARCH-CC.
        MOVE COST-CTR-IN TO DISK-COST-CNTR.
MOVE-IN-ERRORS.
    IF ERR-CODE (I) NOT = ZERO THEN
        MOVE ERR-LIST (I) TO COMMENT
        MOVE DATA-LINE TO PRINT-LINE
        PERFORM PRINT-LINE-OUT
        MOVE SPACES TO DATA-LINE
        MOVE ZERO TO ERR-CODE (I).
PAGE-OVFLOW.
    IF LINE-CT NOT < MAX-LINE THEN
    PERFORM WRITE-SUB-TOTALS
    PERFORM WRITE-HEADINGS.
PAGE-OVFLOW-END.
    EXIT.
SEARCH-CC.
    MOVE CC-SECOND-2-DIGITS TO SEARCH-NO.
    SET CC TO 1.
```

```
     SEARCH ALL COST-CNTRS AT END
         MOVE 1 TO ERR-CODE (4)
     WHEN CC-SIZE-2 (CC) = TO SEARCH-NO
         MOVE CC-SIZE-4 (CC) TO COST-CTR-IN.
 WRITE-SUB-TOTALS.
     PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     PERFORM PRINT-LINE-OUT.
     MOVE 'SUB TOTAL  ' TO S-T-COMMENT.
     MOVE AMT-SUB-TOTAL TO AMT-ALL-OUT.
     MOVE TOTAL-SUB-TOTAL TO TOTAL-ALL-OUT.
     MOVE SUB-LINE TO PRINT-LINE.
     PERFORM PRINT-LINE-OUT.
     ADD AMT-SUB-TOTAL TO AMT-ALL.
     ADD TOTAL-SUB-TOTAL TO TOTAL-ALL.
     MOVE ZEROS TO AMT-SUB-TOTAL, TOTAL-SUB-TOTAL.
 MOVE-SPACES.
     MOVE SPACES TO PRINT-LINE.
 PRINT-LINE-OUT.
     WRITE PRINT-LINE BEFORE ADVANCING 1.
     ADD 1 TO LINE-CT.
*
 READ-SORT-INPUT.
     READ CARD-IN AT END GO TO READ-SORT-INPUT-END.
     IF ID1 NOT = TO SOURCE-CODE THEN
         WRITE PRINT-LINE FROM INPUT-CARD AFTER ADVANCING 1
     PERFORM MOVE-SPACES
     GO TO READ-SORT-INPUT.
     RELEASE SORT-INPUT FROM INPUT-CARD.
     GO TO READ-SORT-INPUT.
 READ-SORT-INPUT-END.
     EXIT.
 WRITE-SORT-OUTPUT.
     RETURN FILE-SORT RECORD INTO INPUT-RECS
         AT END GO TO WRITE-SORT-OUTPUT-END.
     WRITE INPUT-RECS.
     GO TO WRITE-SORT-OUTPUT.
 WRITE-SORT-OUTPUT-END.
     EXIT.
*
*    END SORT ROUTINE
*
 WRITE-FINAL-TOTALS.
     IF ERROR-CODE = TO ZERO THEN
         WRITE DISK-OUT.
     MOVE TOTAL-HOLD TO TOTAL-OUT.
     MOVE DATA-LINE TO PRINT-LINE.
     PERFORM PRINT-LINE-OUT.
     PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     PERFORM WRITE-SUB-TOTALS.
     PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
```

```
          PERFORM PRINT-LINE-OUT.
          MOVE 'GRAND TOTAL' TO S-T-COMMENT.
          MOVE TOTAL-ALL TO TOTAL-ALL-OUT.
          MOVE AMT-ALL TO AMT-ALL-OUT.
          MOVE SUB-LINE TO PRINT-LINE.
          PERFORM PRINT-LINE-OUT.
      CLOSE-FILES.
          CLOSE SORTED-FILE, FINANCIAL-ACCT-TABFI,
              SPECIAL-ACCT-TABFI, FINANCIAL-COST-ALLOCATION,
              COST-CNTR-TABFI, PRINT-OUT.
      E-O-J.
          STOP RUN.
```

```
    PGMNAME=WUASRSER
.SYSIN  DD *
 IDENTIFICATION DIVISION.
 PROGRAM-ID. WUASRSER.
 AUTHOR. ACT SYSTEMS, INC
      SUITE 200
      807 W MORSE BLVD
      WINTER PARK, FLA 32789 .
 DATE-WRITTEN. OCT 3 1977.
 DATE-COMPILED.  OCT 5 1977.
 REMARKS.    THIS PROGRAM EDITS THE REQUISITION FOR STOCK DATA
             CARDS, TOTALS ALL COSTS, FLAGS ANY DISCREPANCIES.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 SOURCE-COMPUTER. IBM-370.
 OBJECT-COMPUTER. IBM-370.
 SPECIAL-NAMES.
     C01 IS NEW-PAGE.
 INPUT-OUTPUT  SECTION.
 FILE-CONTROL.
     SELECT CARD-IN
       ASSIGN TO UR-2540R-S-CARDIN
       ACCESS MODE IS SEQUENTIAL.
     SELECT FILE-SORT
       ASSIGN TO UT-3330-S-FILESORT
       ACCESS MODE IS SEQUENTIAL.
     SELECT SORTED-FILE
       ASSIGN TO UT-3330-S-SORTEDFI
       ACCESS MODE IS SEQUENTIAL.
     SELECT PRINT-OUT
       ASSIGN TO UR-1403-S-PRINTOUT
       ACCESS MODE IS SEQUENTIAL.
     SELECT FINANCIAL-ACCT-TABFI
         ASSIGN TO DA-3330-I-FATABFI
         ACCESS MODE IS RANDOM
         NOMINAL KEY IS FA-NOMINAL
         RECORD KEY IS FA-NUMBER.
     SELECT COST-CNTR-TABFI
         ASSIGN TO DA-3330-I-CCTABFI
         ACCESS MODE IS RANDOM
         NOMINAL KEY IS CC-NOMINAL
         RECORD KEY IS CC-NUMBER.
     SELECT SPECIAL-ACCT-TABFI
         ASSIGN TO DA-3330-S-SATABFI
         ACCESS MODE IS SEQUENTIAL.
     SELECT FINANCIAL-COST-ALLOCATION
         ASSIGN TO UT-3330-S-FICALFI
         ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
 FILE SECTION.
```

```
FD   CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
01   INPUT-CARD.
     02  ID1 PIC X.
     02  ID2 PIC X(79).
01   DATE-CARD.
     02  DATE-IN         PIC X(18).
     02  TITLE-IN        PIC X(24).
     02  FILLER          PIC X(38).
SD   FILE-SORT
     RECORD CONTAINS 80 CHARACTERS
     DATA RECORD IS SORT-INPUT.
01   SORT-INPUT.
     02  S-SOURCE-CODE-NO PIC X.
     02  FILLER           PIC X.
     02  S-REQ-NO         PIC X(10).
     02  FILLER           PIC X(68).
FD   SORTED-FILE
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS INPUT-RECS.
01   INPUT-RECS.
     02  SOURCE-CODE-NO    PIC X.
     02  FILLER            PIC X.
     02  REQ-IN            PIC X(10).
     02  FILLER            PIC X.
     02  ACCT-IN           PIC X(10).
     02  FILLER            PIC X.
     02  COST-CTR-IN.
         05  CC-FIRST-2-DIGITS  PIC XX.
         05  CC-SECOND-2-DIGITS PIC XX.
     02  FILLER            PIC X.
     02  AMOUNT-IN         PIC X(10).
     02  AMT-IN REDEFINES AMOUNT-IN PIC S9(8)V99.
     02  FILLER            PIC X.
     02  TOTAL-IN          PIC X(10).
     02  TOT-IN REDEFINES TOTAL-IN PIC S9(8)V99.
     02  FILLER            PIC X(30).
FD   PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
01   PRINT-LINE          PIC X(133).
FD   COST-CNTR-TABFI
     BLOCK CONTAINS 8 RECORDS
     RECORD CONTAINS 30 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS CC-REC.
```

```
01  CC-REC.
    02  CC-NUMBER             PIC 9(4).
    02  CC-NAME               PIC X(13) OCCURS 2 TIMES.
FD  FINANCIAL-ACCT-TABFI
    BLOCK CONTAINS 8 RECORDS
    RECORD CONTAINS 58 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS FA-REC.
01  FA-REC.
    05  FA-NUMBER             PIC X(10).
    05  FA-NAME               PIC X(20) OCCURS 2 TIMES.
    05  FILLER                PIC X(8).
FD  SPECIAL-ACCT-TABFI
    BLOCK CONTAINS 0 RECORDS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS COST-CENTERS.
01  COST-CENTERS.
    05  RECORD-COUNT.
        10  NO-OF-RECS        PIC 9(4).
        10  FILLER            PIC X(18).
    05  COST-CNTRS OCCURS 1 TO 99 TIMES
        DEPENDING ON NO-OF-RECS
        ASCENDING KEY IS CC-SIZE-2
        INDEXED BY CC.
        10  CC-SIZE-2         PIC X(2).
        10  CC-SIZE-4         PIC X(4).
        10  FILLER            PIC X(16).
FD  FINANCIAL-COST-ALLOCATION
    BLOCK CONTAINS 20 RECORDS
    RECORD CONTAINS 26 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS DISK-OUT.
01  DISK-OUT.
    05  DISK-ACCT             PIC X(10).
    05  DISK-COST-CNTR        PIC X(4).
    05  DISK-COST-CAT         PIC X(2).
    05  DISK-AMOUNT           PIC S9(8)V99.
01  FIRST-TWO-RECS.
    05  FILLER                PIC X.
    05  SORT-SEQUENCE         PIC X.
    05  DISK-TITLE            PIC X(24).
WORKING-STORAGE SECTION.
77  SOURCE-CODE               PIC X VALUE '2'.
77  SEARCH-NO                 PIC XX VALUE SPACES.
77  LINE-CT                   PIC 99 COMP VALUE 0.
77  PAGE-CT                   PIC 9(4) COMP VALUE 1.
77  AMT-ACCUM                 PIC S9(8)V99  COMP VALUE 0.
77  AMT-SUB-TOTAL             PIC S9(8)V99  COMP VALUE 0.
77  TOTAL-SUB-TOTAL           PIC S9(8)V99  COMP VALUE 0.
77  TOTAL-ALL                 PIC S9(10)V99 COMP VALUE 0.
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 77  AMT-ALL                 PIC S9(10)V99 COMP VALUE 0.
 77  REQ-HOLD                PIC X(10) VALUE SPACES.
 77  NUMERIC-HOLD            PIC X(10) VALUE SPACES.
 77  TOTAL-HOLD              PIC S9(8)V99  COMP VALUE 0.
 77  I                       PIC 9 COMP VALUE 0.
 77  MAX-LINE                PIC 99 COMP VALUE 50.
 77  FA-NOMINAL              PIC X(10).
 77  CC-NOMINAL              PIC X(4).
 77  PRINT-REQ-FLAG          PIC X VALUE '1'.
     88  FLAG-ON             VALUE '1'.
     88  FLAG-OFF            VALUE '0'.
 01  HEADING-1.
     02  FILLER              PIC X(51) VALUE SPACES.
     02  FILLER              PIC X(29) VALUE  'REQUISITION FROM STOCK
                                              ' REPORT'.
     02  FILLER              PIC X(53) VALUE SPACES.
 01  HEADING-2.
     02  FILLER              PIC X VALUE SPACES.
     02  FILLER              PIC X(13) VALUE 'DATE ENDING: '.
     02  DATE-OUT            PIC X(18) VALUE SPACES.
     02  FILLER              PIC X(33) VALUE SPACES.
     02  FILLER              PIC X(3) VALUE 'FOR'.
     02  FILLER              PIC X(53) VALUE SPACES.
     02  FILLER              PIC X(5)  VALUE  'PAGE '.
     02  PAGE-OUT            PIC ZZZ9.
     02  FILLER              PIC X(3) VALUE SPACES.
 01  HEADING-3.
     02  FILLER              PIC X(54) VALUE SPACES.
     02  TITLE-OUT           PIC X(24) VALUE SPACES.
     02  FILLER              PIC X(55) VALUE SPACES.
 01  HEADING-4.
     02  FILLER              PIC X VALUE SPACES.
     02  FILLER              PIC X(10) VALUE SPACES.
     02  FILLER              PIC X(13) VALUE 'REQUISITION #'.
     02  FILLER              PIC X(7) VALUE SPACES.
     02  FILLER              PIC X(9) VALUE 'ACCOUNT #'.
     02  FILLER              PIC X(6) VALUE SPACES.
     02  FILLER              PIC X(11) VALUE 'COST CENTER'.
     02  FILLER              PIC X(8) VALUE SPACES.
     02  FILLER              PIC X(6) VALUE 'AMOUNT'.
     02  FILLER              PIC X(10) VALUE SPACES.
     02  FILLER              PIC X(5) VALUE 'TOTAL'.
     02  FILLER              PIC X(15) VALUE SPACES.
     02  FILLER              PIC X(8) VALUE 'COMMENTS'.
     02  FILLER              PIC X(24) VALUE SPACES.
 01  DATA-LINE.
     02  FILLER              PIC X(10) VALUE SPACES.
     02  REQ-OUT             PIC X(10).
     02  FILLER              PIC X(10) VALUE SPACES.
     02  ACCT-OUT            PIC X(10).
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        02  FILLER            PIC X(8)  VALUE SPACES.
        02  COST-CTR-OUT      PIC X(4).
        02  FILLER            PIC X(8)  VALUE SPACES.
        02  AMOUNT-OUT        PIC -(8).--.
        02  FILLER            PIC X(4) VALUE SPACES.
        02  TOTAL-OUT         PIC -(8).--.
        02  FILLER            PIC X(9) VALUE SPACES.
        02  COMMENT           PIC X(25) VALUE SPACES.
        02  FILLER            PIC X(13) VALUE SPACES.
    01  ERROR-CODE.
        02  ERR-CODE OCCURS 7 TIMES PIC 9.
    01  ERROR-LIST.
        02  ERR-LIST-A.
            05  ERR-LIST1 PIC X(75) VALUE  'ACCOUNT NUMBER NOT FOUND
-                                          'REQUISITION-NO NONNUMERIC
-                                         'COST CENTER NOT NUMERIC  '.
            05  ERR-LIST2 PIC X(100) VALUE 'COST CENTER NOT FOUND
-                                          'AMOUNT NOT NUMERIC
-                                          'TOTAL NOT NUMERIC
-                                         'AMOUNTS & TOTAL NOT EQUAL'.
        02  ERR-LIST-B REDEFINES ERR-LIST-A.
            05  ERR-LIST OCCURS 7 TIMES PIC X(25).
    01  SUB-LINE.
        02  FILLER            PIC X(7)  VALUE SPACES.
        02  S-T-COMMENT       PIC X(11) VALUE SPACES.
        02  FILLER            PIC X(40) VALUE SPACES.
        02  AMT-ALL-OUT       PIC -(10).--.
        02  FILLER            PIC X(2) VALUE SPACES.
        02  TOTAL-ALL-OUT     PIC -(10).--.
        02  FILLER            PIC X(47) VALUE SPACES.
    PROCEDURE DIVISION.
    OPEN-FILES.
        OPEN INPUT CARD-IN.
        OPEN OUTPUT PRINT-OUT, SORTED-FILE,
                    FINANCIAL-COST-ALLOCATION.
    READ-TITLE-CARD.
        READ CARD-IN AT END GO TO WRITE-FINAL-TOTALS.
        MOVE SPACES TO DISK-OUT.
        MOVE DATE-IN TO DATE-OUT, DISK-TITLE.
        WRITE DISK-OUT.
        MOVE SPACES TO DISK-OUT.
        MOVE TITLE-IN TO TITLE-OUT, DISK-TITLE.
        MOVE SOURCE-CODE TO SORT-SEQUENCE.
        WRITE DISK-OUT.
        MOVE SPACES TO PRINT-LINE.
        MOVE ' THE FOLLOWING CARDS HAVE A INVALID SOURCE CODE'
            TO PRINT-LINE.
        PERFORM PRINT-LINE-OUT.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    SORT-RECORDS.
```

```
           SORT FILE-SORT ON ASCENDING KEY
               S-REQ-NO
           INPUT PROCEDURE READ-SORT-INPUT
               THRU READ-SORT-INPUT-END
           OUTPUT PROCEDURE WRITE-SORT-OUTPUT
               THRU WRITE-SORT-OUTPUT-END.
       CLOSE-SORT-FILES.
           CLOSE SORTED-FILE, CARD-IN.
           OPEN INPUT SORTED-FILE, FINANCIAL-ACCT-TABFI,
                          COST-CNTR-TABFI, SPECIAL-ACCT-TABFI.
       HOUSEKEEPING.
           MOVE ZEROS TO ERROR-CODE.
           READ SPECIAL-ACCT-TABFI AT END
               MOVE 'COST CENTER TABLE CONTAINS NO DATA' TO
               PRINT-LINE,
               PERFORM PRINT-LINE-OUT
               GO TO CLOSE-FILES.
       WRITE-HEADINGS.
           MOVE 0 TO LINE-CT.
           MOVE PAGE-CT TO PAGE-OUT.
           PERFORM MOVE-SPACES.
           WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
           MOVE HEADING-1 TO PRINT-LINE.
           PERFORM PRINT-LINE-OUT.
           MOVE HEADING-2 TO PRINT-LINE.
           PERFORM PRINT-LINE-OUT.
           MOVE HEADING-3 TO PRINT-LINE.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
           MOVE HEADING-4 TO PRINT-LINE.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
           ADD 1 TO PAGE-CT.
       READ-RECORDS.
           READ SORTED-FILE AT END GO TO WRITE-FINAL-TOTALS.
       EDIT-RECORDS.
           MOVE ACCT-IN TO ACCT-OUT, FA-NOMINAL, DISK-ACCT.
           READ FINANCIAL-ACCT-TABFI INVALID KEY
               MOVE 1 TO ERR-CODE (1).
           MOVE REQ-IN TO REQ-HOLD.
           IF FLAG-ON MOVE REQ-IN TO REQ-OUT
           ELSE MOVE SPACES TO REQ-OUT.
           MOVE COST-CTR-IN TO COST-CTR-OUT.
           EXAMINE INPUT-RECS REPLACING ALL ' ' BY '0'.
           IF REQ-IN NOT NUMERIC MOVE 1 TO ERR-CODE (2).
           IF COST-CTR-IN NOT NUMERIC MOVE 1 TO ERR-CODE (3)
               MOVE ZEROS TO COST-CTR-IN.
           IF COST-CTR-IN NOT = ZEROS THEN
               PERFORM FIND-COST-CNTR.
           MOVE AMT-IN TO AMOUNT-OUT, DISK-AMOUNT.
```

```
        ADD AMT-IN TO AMT-ACCUM, AMT-SUB-TOTAL.
    IF TOT-IN NOT = TO 0  THEN MOVE TOT-IN TO TOTAL-HOLD,
        ADD TOTAL-HOLD TO TOTAL-SUB-TOTAL.
    MOVE 0 TO TOTAL-OUT.
READ-NEXT-REC.
    PERFORM READ-RECORDS.
CHECK-NEXT-REC.
    MOVE REQ-IN TO NUMERIC-HOLD.
    IF NUMERIC-HOLD = TO REQ-HOLD THEN
                         MOVE 'C' TO PRINT-REQ-FLAG
                         GO TO WRITE-LINE-OUT.
    MOVE '1' TO PRINT-REQ-FLAG.
        MOVE TOTAL-HOLD TO TOTAL-OUT.
        IF TOTAL-HOLD NOT = TO AMT-ACCUM THEN
                         MOVE 1 TO ERR-CODE (7).
        MOVE ZEROS TO AMT-ACCUM, TOTAL-HOLD.
WRITE-LINE-OUT.
    IF ERROR-CODE NOT = ZERO THEN
        PERFORM MOVE-IN-ERRORS VARYING I
            FROM 1 BY 1 UNTIL ERROR-CODE = ZEROS
        ELSE MOVE DATA-LINE TO PRINT-LINE
        PERFORM PRINT-LINE-OUT
        WRITE DISK-OUT
        MOVE SPACES TO DISK-OUT.
    IF FLAG-ON THEN
        PERFORM PAGE-OVFLOW THRU PAGE-OVFLOW-END.
    GO TO EDIT-RECORDS.
FIND-COST-CNTR.
    IF CC-FIRST-2-DIGITS NOT = ZEROS THEN
        MOVE COST-CTR-IN TO CC-NOMINAL
        READ COST-CNTR-TABLE INVALID KEY
        MOVE 1 TO ERR-CODE (4)
    ELSE PERFORM SEARCH-CC.
    MOVE COST-CTR-IN TO DISK-COST-CNTR.
MOVE-IN-ERRORS.
    IF ERR-CODE (I) NOT = ZEROS THEN
        MOVE ERR-LIST (I) TO COMMENT
        MOVE DATA-LINE TO PRINT-LINE
        PERFORM PRINT-LINE-OUT
        MOVE SPACES TO DATA-LINE
        MOVE ZERO TO ERR-CODE (I).
PAGE-OVFLOW.
    IF LINE-CT NOT < MAX-LINE THEN
    PERFORM WRITE-SUB-TOTALS
    PERFORM WRITE-HEADINGS.
PAGE-OVFLOW-END.
    EXIT.
SEARCH-CC.
    MOVE CC-SECOND-2-DIGITS TO SEARCH-NO.
    SET CC TO 1.
```

```
         SEARCH ALL COST-CNTRS AT END
             MOVE 1 TO ERR-CODE (4)
         WHEN CC-SIZE-2 (CC) = TO SEARCH-NO
             MOVE CC-SIZE-4 (CC) TO COST-CTR-IN.
     WRITE-SUB-TOTALS.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
         PERFORM PRINT-LINE-OUT.
         MOVE 'SUB TOTAL  ' TO S-T-COMMENT.
         MOVE AMT-SUB-TOTAL TO AMT-ALL-OUT.
         MOVE TOTAL-SUB-TOTAL TO TOTAL-ALL-OUT.
         MOVE SUB-LINE TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         ADD AMT-SUB-TOTAL TO AMT-ALL.
         ADD TOTAL-SUB-TOTAL TO TOTAL-ALL.
         MOVE ZEROS TO AMT-SUB-TOTAL, TOTAL-SUB-TOTAL.
     MOVE-SPACES.
         MOVE SPACES TO PRINT-LINE.
     PRINT-LINE-OUT.
         WRITE PRINT-LINE BEFORE ADVANCING 1.
         ADD 1 TO LINE-CT.
    *    SORT  ROUTINE
    *
     READ-SORT-INPUT.
         READ CARD-IN AT END GO TO READ-SORT-INPUT-END.
         IF ID1 NOT = TO SOURCE-CODE THEN
             WRITE PRINT-LINE FROM INPUT-CARD AFTER ADVANCING 1
         PERFORM MOVE-SPACES
             GO TO READ-SORT-INPUT.
         RELEASE SORT-INPUT FROM INPUT-CARD.
         GO TO READ-SORT-INPUT.
     READ-SORT-INPUT-END.
         EXIT.
     WRITE-SORT-OUTPUT.
         RETURN FILE-SORT RECORD INTO INPUT-RECS
             AT END GO TO WRITE-SORT-OUTPUT-END.
         WRITE INPUT-RECS.
         GO TO WRITE-SORT-OUTPUT.
     WRITE-SORT-OUTPUT-END.
         EXIT.
    *
    *    END SORT ROUTINE
    *
     WRITE-FINAL-TOTALS.
         IF ERROR-CODE = TO ZERO THEN
             WRITE DISK-OUT.
         MOVE TOTAL-HOLD TO TOTAL-OUT.
         MOVE DATA-LINE TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         PERFORM WRITE-SUB-TOTALS.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
         PERFORM PRINT-LINE-OUT.
         MOVE 'GRAND TOTAL' TO S-T-COMMENT.
         MOVE TOTAL-ALL TO TOTAL-ALL-OUT.
         MOVE AMT-ALL TO AMT-ALL-OUT.
         MOVE SUB-LINE TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
     CLOSE-FILES.
         CLOSE SORTED-FILE, FINANCIAL-ACCT-TABFI,
             SPECIAL-ACCT-TABFI, FINANCIAL-COST-ALLOCATION,
             COST-CNTR-TABFI, PRINT-OUT.
     E-O-J.
         STOP RUN.
```

```
      PGMNAME=WUASPRER
.SYSIN  DD *
  IDENTIFICATION DIVISION.
  PROGRAM-ID. WUASPRER.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FLA 32789 .
  DATE-WRITTEN. OCT 8 1977.
  DATE-COMPILED.  OCT 10 1977.
  REMARKS.    THIS PROGRAM EDITS THE PAYROLL REPORT DATA
              CARDS, TOTALS ALL COSTS, FLAGS ANY DISCREPANCIES.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT  SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
        ASSIGN TO UR-2540R-S-CARDIN
        ACCESS MODE IS SEQUENTIAL.
      SELECT SORTED-FILE
        ASSIGN TO UT-3330-S-SORTEDFI
        ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
        ASSIGN TO UR-1403-S-PRINTOUT
        ACCESS MODE IS SEQUENTIAL.
      SELECT FINANCIAL-ACCT-TABFI
          ASSIGN TO DA-3330-I-FATABFI
          ACCESS MODE IS RANDOM
          NOMINAL KEY IS FA-NOMINAL
          RECORD KEY IS FA-NUMBER.
      SELECT COST-CNTR-TABFI
          ASSIGN TO DA-3330-I-CCTABFI
          ACCESS MODE IS RANDOM
          NOMINAL KEY IS CC-NOMINAL
          RECORD KEY IS CC-NUMBER.
      SELECT SPECIAL-ACCT-TABFI
          ASSIGN TO DA-3330-S-SATABFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT FINANCIAL-COST-ALLOCATION
          ASSIGN TO UT-3330-S-FICALFI
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  CARD-IN
      RECORD CONTAINS 80 CHARACTERS
      LABEL RECORDS ARE OMITTED
```

```
    DATA RECORD IS INPUT-CARD.
01  INPUT-CARD.
    02  ID1                       PIC X.
    02  FILLER                    PIC X(11).
    02  DATE-DATA                 PIC X(6).
    02  FILLER                    PIC X(62).
01  DATE-CARD.
    02  DATE-IN               PIC X(18).
    02  TITLE-IN              PIC X(24).
    02  FILLER                PIC X(38).
FD  SORTED-FILE
    RECORD CONTAINS 80 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS INPUT-RECS.
01  INPUT-RECS.
    02  SOURCE-CODE-NO        PIC X.
    02  FILLER                PIC X.
    02  EMPL-NO-IN.
        05  EMP1-IN           PIC X(3).
        05  EMP2-IN           PIC XX.
        05  EMP3-IN           PIC X(4).
    02  FILLER                PIC X.
    02  DATE-DATA-IN          PIC X(6).
    02  FILLER                PIC X.
    02  ACCT-IN               PIC X(10).
    02  FILLER                PIC X.
    02  COST-CTR-IN.
        05  CC-FIRST-2-DIGITS  PIC XX.
        05  CC-SECOND-2-DIGITS PIC XX.
    02  FILLER                PIC X.
    02  TOTAL-COST-IN         PIC X(10).
    02  TOT-COST-IN REDEFINES TOTAL-COST-IN PIC S9(8)V99.
    02  FILLER                PIC X.
    02  GROSS-PAY-IN          PIC X(10).
    02  GRO-PAY-IN REDEFINES GROSS-PAY-IN PIC S9(8)V99.
    02  FILLER                PIC X(24).
FD  PRINT-OUT
    RECORD CONTAINS 133 CHARACTERS
    LABEL RECORDS ARE OMITTED
    DATA RECORD IS PRINT-LINE.
01  PRINT-LINE            PIC X(133).
FD  COST-CNTR-TABFI
    BLOCK CONTAINS 8 RECORDS
    RECORD CONTAINS 30 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS CC-REC.
01  CC-REC.
    02  CC-NUMBER             PIC 9(4).
    02  CC-NAME               PIC X(13) OCCURS 2 TIMES.
FD  FINANCIAL-ACCT-TABFI
```

```
               BLOCK CONTAINS 8 RECORDS
               RECORD CONTAINS 58 CHARACTERS
               LABEL RECORDS ARE STANDARD
               DATA RECORD IS FA-REC.
           01  FA-REC.
               05  FA-NUMBER           PIC X(10).
               05  FA-NAME             PIC X(20) OCCURS 2 TIMES.
               05  FILLER              PIC X(8).
           FD  SPECIAL-ACCT-TABFI
               BLOCK CONTAINS 0 RECORDS
               LABEL RECORDS ARE STANDARD
               DATA RECORD IS COST-CENTERS.
           01  COST-CENTERS.
               05  RECORD-COUNT.
                   10  NO-OF-RECS      PIC 9(4).
                   10  FILLER          PIC X(18).
               05  COST-CNTRS OCCURS 1 TO 99 TIMES
                   DEPENDING ON NO-OF-RECS
                   ASCENDING KEY IS CC-SIZE-2
                   INDEXED BY CC.
                   10  CC-SIZE-2       PIC X(2).
                   10  CC-SIZE-4       PIC X(4).
                   10  FILLER          PIC X(16).
           FD  FINANCIAL-COST-ALLOCATION
               BLOCK CONTAINS 20 RECORDS
               RECORD CONTAINS 26 CHARACTERS
               LABEL RECORDS ARE STANDARD
               DATA RECORD IS DISK-OUT.
           01  DISK-OUT.
               05  DISK-ACCT           PIC X(10).
               05  DISK-COST-CNTR      PIC X(4).
               05  DISK-COST-CAT       PIC X(2).
               05  DISK-AMOUNT         PIC S9(8)V99.
           01  FIRST-TWO-RECS.
               05  FILLER              PIC X.
               05  SORT-SEQUENCE       PIC X.
               05  DISK-TITLE          PIC X(24).
           WORKING-STORAGE SECTION.
           77  SOURCE-CODE             PIC X VALUE '1'.
           77  SEARCH-NO               PIC XX VALUE SPACES.
           77  LINE-CT                 PIC 99 COMP VALUE 0.
           77  PAGE-CT                 PIC 9(4) COMP VALUE 0.
           77  TOTAL-ACCUM             PIC S9(8)V99  COMP VALUE 0.
           77  GRAND-TOTAL-ACCUM       PIC S9(8)V99  COMP VALUE 0.
           77  TOTAL-SUBTOTAL          PIC S9(8)V99  COMP VALUE 0.
           77  GROSS-SUB-TOTAL         PIC S9(8)V99  COMP VALUE 0.
           77  GRAND-SUBTOTAL          PIC S9(8)V99  COMP VALUE 0.
           77  TOTAL-ALL               PIC S9(10)V99 COMP VALUE 0.
           77  GROSS-ALL               PIC S9(10)V99 COMP VALUE 0.
           77  GRAND-ALL               PIC S9(10)V99 COMP VALUE 0.
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 77  EMPL-NO-HOLD             PIC X(9) VALUE SPACES.
 77  DATE-HOLD                PIC X(6) VALUE SPACES.
 77  GROSS-HOLD               PIC S9(8)V99  COMP VALUE 0.
 77  I                        PIC 9 COMP VALUE 0.
 77  MAX-LINE                 PIC 99 COMP VALUE 53.
 77  FA-NOMINAL               PIC X(10).
 77  CC-NOMINAL               PIC X(4).
 77  PRINT-EMPL-FLAG          PIC X VALUE '1'.
     88  FLAG-ON              VALUE '1'.
     88  FLAG-OFF             VALUE '0'.
 01  HEADING-1.
     02  FILLER               PIC X(59) VALUE SPACES.
     02  FILLER               PIC X(14) VALUE 'PAYROLL REPORT'.
     02  FILLER               PIC X(60) VALUE SPACES.
 01  HEADING-2.
     02  FILLER               PIC X VALUE SPACES.
     02  FILLER               PIC X(13) VALUE 'DATE ENDING: '.
     02  DATE-OUT             PIC X(18) VALUE SPACES.
     02  FILLER               PIC X(33) VALUE SPACES.
     02  FILLER               PIC X(3) VALUE 'FOR'.
     02  FILLER               PIC X(53) VALUE SPACES.
     02  FILLER               PIC X(5)  VALUE  'PAGE '.
     02  PAGE-OUT             PIC ZZZ9.
     02  FILLER               PIC X(3) VALUE SPACES.
 01  HEADING-3.
     02  FILLER               PIC X(54) VALUE SPACES.
     02  TITLE-OUT            PIC X(24) VALUE SPACES.
     02  FILLER               PIC X(55) VALUE SPACES.
 01  HEADING-4.
     02  FILLER               PIC X(5) VALUE SPACES.
     02  FILLER               PIC X(15) VALUE 'EMPLOYEE NUMBER'.
     02  FILLER               PIC X(6) VALUE SPACES.
     02  FILLER               PIC X(4) VALUE 'DATE'.
     02  FILLER               PIC X(4) VALUE SPACES.
     02  FILLER               PIC X(14) VALUE 'ACCOUNT NUMBER'.
     02  FILLER               PIC X(5) VALUE SPACES.
     02  FILLER               PIC X(11) VALUE 'COST CENTER'.
     02  FILLER               PIC X(6) VALUE SPACES.
     02  FILLER               PIC X(10) VALUE 'TOTAL COST'.
     02  FILLER               PIC X(5) VALUE SPACES.
     02  FILLER               PIC X(9) VALUE 'GROSS PAY'.
     02  FILLER               PIC X(6) VALUE SPACES.
     02  FILLER               PIC X(9) VALUE 'TOTAL PAY'.
     02  FILLER               PIC X(10) VALUE SPACES.
     02  FILLER               PIC X(8) VALUE 'COMMENTS'.
     02  FILLER               PIC X(6) VALUE SPACES.
 01  DATA-LINE.
     02  FILLER               PIC X(7) VALUE SPACES.
     02  EMPL-NO-OUT.
         05  EMP1-OUT         PIC X(3).
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```
                05  DASH1            PIC X VALUE '-'.
                05  EMP2-OUT         PIC XX.
                05  DASH2            PIC X VALUE '-'.
                05  EMP3-OUT         PIC X(4).
            02  FILLER               PIC X(7) VALUE SPACES.
            02  DATE-DATA-OUT        PIC X(6).
            02  FILLER               PIC X(5) VALUE SPACES.
            02  ACCT-OUT             PIC X(10).
            02  FILLER               PIC X(10) VALUE SPACES.
            02  COST-CTR-OUT         PIC X(4).
            02  FILLER               PIC X(8)  VALUE SPACES.
            02  TOTAL-COST-OUT       PIC -(8).--.
            02  FILLER               PIC X(4) VALUE SPACES.
            02  GROSS-PAY-OUT        PIC -(8).--.
            02  FILLER               PIC X(4) VALUE SPACES.
            02  GRAND-PAY-OUT        PIC -(8).--.
            02  FILLER               PIC X(4) VALUE SPACES.
            02  COMMENT              PIC X(20) VALUE SPACES.
        01  ERROR-CODE.
            02  ERR-CODE OCCURS 8 TIMES PIC 9.
        01  ERROR-LIST.
            02  ERR-LIST-A.
                05  ERR-LIST1  PIC X(80) VALUE      'ACCOUNT # NOT FOUND
      -                                             'EMPLOYEE # N-NUMERIC
      -                                             'COST CTR NOT NUMERIC
      -                                            'COST CNTR NOT FOUND '.
                05  ERR-LIST2 PIC X(80) VALUE       'TOTAL IN NOT NUMERIC
      -                                             'GROSS PAY NOTNUMERIC
      -                                             'GROSS & TOTAL NOT =
      -                                            'DATE NOT NUMERIC    '.
            02  ERR-LIST-B REDEFINES ERR-LIST-A.
                05  ERR-LIST OCCURS 8 TIMES PIC X(20).
        01  SUB-LINE.
            02  FILLER               PIC X(5)  VALUE SPACES.
            02  S-T-COMMENT          PIC X(11) VALUE SPACES.
            02  FILLER               PIC X(50) VALUE SPACES.
            02  TOTAL-ALL-OUT        PIC -(10).--.
            02  FILLER               PIC X(2) VALUE SPACES.
            02  GROSS-ALL-OUT        PIC -(10).--.
            02  FILLER               PIC XX VALUE SPACES.
            02  GRAND-ALL-OUT        PIC -(10).--.
            02  FILLER               PIC X(24) VALUE SPACES.
        PROCEDURE DIVISION.
        OPEN-FILES.
            OPEN INPUT CARD-IN.
            OPEN OUTPUT PRINT-OUT, SORTED-FILE,
                        FINANCIAL-COST-ALLOCATION.
        READ-TITLE-CARD.
            READ CARD-IN AT END GO TO WRITE-FINAL-TOTALS.
            MOVE SPACES TO DISK-OUT.
```

```
         MOVE DATE-IN TO DATE-OUT, DISK-TITLE.
         WRITE DISK-OUT.
         MOVE SPACES TO DISK-OUT.
         MOVE TITLE-IN TO TITLE-OUT, DISK-TITLE.
         MOVE SOURCE-CODE TO SORT-SEQUENCE.
         WRITE DISK-OUT.
         MOVE SPACES TO PRINT-LINE.
         MOVE ' THE FOLLOWING CARDS HAVE A INVALID SOURCE CODE'
             TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     MOVE-INPUT-TO-DISK.
         READ CARD-IN AT END GO TO RE-OPEN-FILES.
         IF ID1 NOT = SOURCE-CODE THEN
              WRITE PRINT-LINE FROM INPUT-CARD AFTER 1
              PERFORM MOVE-SPACES
              GO TO MOVE-INPUT-TO-DISK.
         MOVE INPUT-CARD TO INPUT-RECS.
         WRITE INPUT-RECS.
         GO TO MOVE-INPUT-TO-DISK.
     RE-OPEN-FILES.
         CLOSE SORTED-FILE, CARD-IN.
         OPEN INPUT SORTED-FILE, FINANCIAL-ACCT-TABFI,
                       COST-CNTR-TABFI, SPECIAL-ACCT-TABFI.
     HOUSEKEEPING.
         MOVE ZEROS TO ERROR-CODE.
         READ SPECIAL-ACCT-TABFI AT END
              MOVE 'COST CENTER TABLE CONTAINS NO DATA' TO
              PRINT-LINE,
              PERFORM PRINT-LINE-OUT
              GO TO CLOSE-FILES.
     WRITE-HEADINGS.
         MOVE 0 TO LINE-CT.
         ADD 1 TO PAGE-CT.
         MOVE PAGE-CT TO PAGE-OUT.
         PERFORM MOVE-SPACES.
         WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
         MOVE HEADING-1 TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         MOVE HEADING-2 TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         MOVE HEADING-3 TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
         MOVE HEADING-4 TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     READ-RECORDS.
         READ SORTED-FILE AT END GO TO WRITE-FINAL-TOTALS.
     EDIT-RECORDS.
```

```
    MOVE ACCT-IN TO ACCT-OUT, FA-NOMINAL, DISK-ACCT.
    READ FINANCIAL-ACCT-TABFI INVALID KEY
         MOVE 1 TO ERR-CODE (1).
    MOVE COST-CTR-IN TO COST-CTR-OUT.
    MOVE EMPL-NO-IN TO EMPL-NO-HOLD.
    MOVE DATE-DATA-IN TO DATE-HOLD.
    EXAMINE INPUT-RECS REPLACING ALL ' ' BY '0'.
    IF EMPL-NO-IN NOT NUMERIC MOVE 1 TO ERR-CODE (2).
    IF DATE-DATA-IN NOT NUMERIC MOVE 1 TO ERR-CODE (8).
    IF FLAG-ON THEN
        MOVE EMP1-IN TO EMP1-OUT.
        MOVE EMP2-IN TO EMP2-OUT.
        MOVE EMP3-IN TO EMP3-OUT.
        MOVE '-' TO DASH1, DASH2.
        MOVE DATE-DATA-IN TO DATE-DATA-OUT.
    ELSE MOVE SPACES TO EMPL-NO-OUT, DATE-DATA-OUT.
TEST-COST-CNTR.
    IF COST-CTR-IN NOT NUMERIC MOVE 1 TO ERR-CODE (3)
        MOVE ZEROS TO COST-CTR-IN.
    IF COST-CTR-IN NOT = ZEROS THEN
        PERFORM FIND-COST-CNTR.
    MOVE TOT-COST-IN TO TOTAL-COST-OUT, DISK-AMOUNT.
        ADD TOT-COST-IN TO TOTAL-ACCUM.
    IF GRO-PAY-IN > 0 THEN MOVE GRO-PAY-IN TO GROSS-HOLD.
    MOVE ZEROS TO GROSS-PAY-OUT, GRAND-PAY-OUT.
READ-NEXT-REC.
    PERFORM READ-RECORDS.
CHECK-NEXT-REC.
    IF (EMPL-NO-IN = EMPL-NO-HOLD) AND (DATE-DATA-IN = DATE-HOLD)
        THEN MOVE '0' TO PRINT-EMPL-FLAG.
        GO TO WRITE-LINE-OUT.
MOVE-GROSS-OUT.
    MOVE '1' TO PRINT-EMPL-FLAG.
    MOVE GROSS-HOLD TO GROSS-PAY-OUT.
    IF GROSS-HOLD NOT = TOTAL-ACCUM THEN
        MOVE 1 TO ERR-CODE (7).
    ADD TOTAL-ACCUM TO GRAND-TOTAL-ACCUM, TOTAL-SUBTOTAL.
    ADD GROSS-HOLD TO GROSS-SUB-TOTAL.
    MOVE ZEROS TO TOTAL-ACCUM, GROSS-HOLD.
MOVE-GRAND-OUT.
    IF EMPL-NO-IN NOT = EMPL-NO-HOLD THEN
        MOVE GRAND-TOTAL-ACCUM TO GRAND-PAY-OUT
        ADD GRAND-TOTAL-ACCUM TO GRAND-SUBTOTAL
        MOVE ZEROS TO GRAND-TOTAL-ACCUM.
WRITE-LINE-OUT.
    IF ERROR-CODE NOT = ZERO THEN
        PERFORM MOVE-IN-ERRORS VARYING I
            FROM 1 BY 1 UNTIL ERROR-CODE = ZEROS
        ELSE MOVE DATA-LINE TO PRINT-LINE
        PERFORM PRINT-LINE-OUT
        WRITE DISK-OUT
        MOVE SPACES TO DISK-OUT.
CHECK-FOR-END-OF-PAGE.
    IF FLAG-ON THEN
        PERFORM PAGE-OVFLOW THRU PAGE-OVFLOW-END.
    GO TO EDIT-RECORDS.
FIND-COST-CNTR.
    IF CC-FIRST-2-DIGITS NOT = ZEROS THEN
        MOVE COST-CTR-IN TO CC-NOMINAL
        READ COST-CNTR-TABFI INVALID KEY
        MOVE 1 TO ERR-CODE (4)
    ELSE PERFORM SEARCH-CC.
    MOVE COST-CTR-IN TO DISK-COST-CNTR.
MOVE-IN-ERRORS.
    IF ERR-CODE (I) NOT = ZEROS THEN
        MOVE ERR-LIST (I) TO COMMENT
        MOVE DATA-LINE TO PRINT-LINE
        PERFORM PRINT-LINE-OUT
        MOVE SPACES TO DATA-LINE
        MOVE ZERO TO ERR-CODE (I).
PAGE-OVFLOW.
    IF LINE-CT NOT < MAX-LINE THEN
    MOVE '1' TO PRINT-EMPL-FLAG
    PERFORM WRITE-SUB-TOTALS
    PERFORM WRITE-HEADINGS.
PAGE-OVFLOW-END.
    EXIT.
SEARCH-CC.
    MOVE CC-SECOND-2-DIGITS TO SEARCH-NO.
    SET CC TO 1.
    SEARCH ALL COST-CNTRS AT END
       MOVE 1 TO ERR-CODE (4)
    WHEN CC-SIZE-2 (CC) = TO SEARCH-NO
       MOVE CC-SIZE-4 (CC) TO COST-CTR-IN.
WRITE-SUB-TOTALS.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    PERFORM PRINT-LINE-OUT.
    MOVE 'SUB TOTAL   ' TO S-T-COMMENT.
    MOVE TOTAL-SUBTOTAL TO TOTAL-ALL-OUT.
    MOVE GROSS-SUB-TOTAL TO GROSS-ALL-OUT.
    MOVE GRAND-SUBTOTAL TO GRAND-ALL-OUT.
    MOVE SUB-LINE TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    ADD TOTAL-SUBTOTAL TO TOTAL-ALL.
    ADD GROSS-SUB-TOTAL TO GROSS-ALL.
    ADD GRAND-SUBTOTAL TO GRAND-ALL.
    MOVE ZEROS TO TOTAL-SUBTOTAL, GROSS-SUB-TOTAL,
                    GRAND-SUBTOTAL.
MOVE-SPACES.
    MOVE SPACES TO PRINT-LINE.
```

```
PRINT-LINE-OUT.
     WRITE PRINT-LINE BEFORE ADVANCING 1.
     ADD 1 TO LINE-CT.
WRITE-FINAL-TOTALS.
     MOVE ZEROS TO EMPL-NO-HOLD.
     PERFORM MOVE-GROSS-OUT THRU WRITE-LINE-OUT.
     PERFORM WRITE-SUB-TOTALS.
     PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     PERFORM PRINT-LINE-OUT.
     MOVE 'GRAND TOTAL' TO S-T-COMMENT.
     MOVE TOTAL-ALL TO TOTAL-ALL-OUT.
     MOVE GROSS-ALL TO GROSS-ALL-OUT.
     MOVE GRAND-ALL TO GRAND-ALL-OUT.
     MOVE SUB-LINE TO PRINT-LINE.
     PERFORM PRINT-LINE-OUT.
CLOSE-FILES.
     CLOSE SORTED-FILE, FINANCIAL-ACCT-TABFI,
         SPECIAL-ACCT-TABFI, FINANCIAL-COST-ALLOCATION,
         COST-CNTR-TABFI, PRINT-OUT.
E-O-J.
     STOP RUN.
```

```
    PGMNAME=WUASCARP
.SYSIN  DD *
 IDENTIFICATION DIVISION.
 PROGRAM-ID. WUASCARP.
 AUTHOR. ACT SYSTEMS, INC
       SUITE 200
       807 W MORSE BLVD
       WINTER PARK, FLA 32789.
 DATE-WRITTEN. OCT 24 1977.
 DATE-COMPILED. OCT 26 1977.
 REMARKS.     THIS PROGRAM READS THE COST ALLOCATION
              FILES, TOTALS THE COSTS AND PRODUCES
              A COST QLLOSQTYON RUP/RT.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 SOURCE-COMPUTER. IBM-370.
 OBJECT-COMPUTER. IBM-370.
 SPECIAL-NAMES.
     C01 IS NEW-PAGE.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
     SELECT FILE-SORT
         ASSIGN TO UT-3330-S-FILESORT
         ACCESS MODE IS SEQUENTIAL.
     SELECT FINANCIAL-COST-ALLOCATION
         ASSIGN TO UT-3330-S-FICALFI
         ACCESS MODE IS SEQUENTIAL.
     SELECT FINANCIAL-ACCT-TABFI
         ASSIGN TO DA-3330-I-FATABFI
         ACCESS MODE RANDOM
         NOMINAL KEY IS FA-NOMINAL
         RECORD KEY IS FA-NUMBER.
     SELECT PRINT-OUT
         ASSIGN TO UR-1403-S-PRINTOUT
         ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
 FILE SECTION.
 FD  PRINT-OUT
     RECORD CONTAINS 81 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
 01  PRINT-LINE.
     02  FILLER             PIC X.
     02  PRINT-DATA         PIC X(80).
 FD  FINANCIAL-ACCT-TABFI
         BLOCK CONTAINS 8 RECORDS
         RECORD CONTAINS 58 CHARACTERS
         LABEL RECORDS ARE STANDARD
         DATA RECORD IS FA-REC.
 01  FA-REC.
```

```
           02  FA-NUMBER          PIC X(10).
           02  FA-NAME1           PIC X(20).
           02  FA-NAME2           PIC X(20).
           02  FILLER             PIC X(8).
       SD  FILE-SORT
           RECORD CONTAINS 26 CHARACTERS
           DATA RECORD IS SORT-DATA.
       01  SORT-DATA.
           02  S-ACCT-NO          PIC X(10).
           02  FILLER             PIC X(16).
       FD  FINANCIAL-COST-ALLOCATION
           BLOCK CONTAINS 20 RECORDS
           RECORD CONTAINS 26 CHARACTERS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS INPUT-RECS.
       01  INPUT-RECS.
           02  ACCT-IN            PIC X(10).
           02  COST-CNTR-IN       PIC X(4).
           02  COST-CAT-IN        PIC X(2).
           02  AMOUNT-IN          PIC S9(8)V99.
       01  FIRST-TWO-RECS.
           02  FILLER             PIC X.
           02  S-CODE             PIC 9.
           02  TITLE-IN.
               05  DATE-IN        PIC X(18).
               05  FILLER         PIC X(6).
       WORKING-STORAGE SECTION.
       77  DEBIT-TOTAL            PIC S9(8)V99 VALUE +0.
       77  CREDIT-TOTAL           PIC S9(8)V99 VALUE +0.
       77  FA-NOMINAL             PIC X(10) VALUE SPACES.
       77  ACCT-TOTAL             PIC S9(8)V99 VALUE ZERO.
       77  ACCT-HOLD              PIC X(10) VALUE SPACES.
       77  SOURCE-CODE            PIC X.
       77  LINE-CT                PIC 99 COMP VALUE 0.
       77  PAGE-CT                PIC 9(4) COMP VALUE 1.
       77  MAX-LINE               PIC 99 COMP VALUE 54.
       01  HEAD1.
           02  FILLER             PIC X(13) VALUE SPACES.
           02  FILLER             PIC X(29) VALUE
                                      'FINANCIAL COST ALLOCATION OF '.
           02  TOP-TITLE          PIC X(29) VALUE SPACES.
           02  FILLER             PIC X(9)  VALUE SPACES.
       01  HEAD2.
           02  FILLER             PIC X(6) VALUE 'DATE: '.
           02  DATE-OUT           PIC X(18).
           02  FILLER             PIC X(14) VALUE SPACES.
           02  FILLER             PIC X(3) VALUE 'FOR'.
           02  FILLER             PIC X(29) VALUE SPACES.
           02  FILLER             PIC X(6) VALUE 'PAGE: '.
           02  PAGE-OUT           PIC Z(4).
```

```
 01  HEAD3.
      02  FILLER              PIC X(28) VALUE SPACES.
      02  TITLE-OUT           PIC X(24).
      02  FILLER              PIC X(28) VALUE SPACES.
 01  HEAD4.
      02  FILLER              PIC X(5)  VALUE SPACES.
      02  FILLER              PIC X(14) VALUE 'ACCOUNT NUMBER'.
      02  FILLER              PIC X(10) VALUE SPACES.
      02  FILLER              PIC X(12) VALUE 'ACCOUNT NAME'.
      02  FILLER              PIC X(11) VALUE SPACES.
      02  FILLER              PIC X(6)  VALUE 'AMOUNT'.
      02  FILLER              PIC X(6)  VALUE SPACES.
      02  FILLER              PIC X(13) VALUE 'ACCOUNT TOTAL'.
      02  FILLER              PIC X(3)  VALUE SPACES.
 01  DATA-LINE.
      02  FILLER              PIC X(6).
      02  COMMENT.
           05  FILLER         PIC X(2).
           05  ACCT-OUT       PIC X(10).
      02  FILLER              PIC X(7)  VALUE SPACES.
      02  FA-NAME-OUT         PIC X(20) VALUE SPACES.
      02  FILLER              PIC X(1)  VALUE SPACES.
      02  AMOUNT-OUT          PIC -(8)9.99.
      02  FILLER              PIC X(4)  VALUE SPACES.
      02  ACCT-TOTAL-OUT      PIC -(8)9.99.
      02  FILLER              PIC X(6)  VALUE SPACES.
 01  TOP-TITLES.
      02  TL1.
           05  FILLER PIC X(87) VALUE 'PAYROLL REPORT TRANSACTIONS
-                                      ' REQUISITIONS  FROM  STOCK
-                                     'SERVICE CONTRACT TRANSACTIONS'.
           05  FILLER PIC X(87) VALUE ' PAYMENT  AUTHORIZATIONS
-                                      'MISCELLANEOUS TRANSACTIONS
-                                     'DEPRECIATION VALUES          '.
      02  TL2 REDEFINES TL1.
           05  TITLES OCCURS 6 TIMES PIC X(29).
 PROCEDURE DIVISION.
 OPEN-SORT-FILES.
      OPEN INPUT  FINANCIAL-ACCT-TABLE
           OUTPUT PRINT-OUT.
 SORT-RECORDS.
      SORT FILE-SORT ON ASCENDING KEY
           S-ACCT-NO
           USING  FINANCIAL-COST-ALLOCATION
           GIVING FINANCIAL-COST-ALLOCATION.
 OPEN-FCA-FILE.
      OPEN INPUT  FINANCIAL-COST-ALLOCATION.
 READ-FIRST-2-REC.
      PERFORM READ-INPUT.
      MOVE DATE-IN TO DATE-OUT.
```

```
         PERFORM READ-INPUT.
         MOVE TITLES (S-CODE) TO TOP-TITLE.
         MOVE S-CODE TO SOURCE-CODE.
         MOVE TITLE-IN TO TITLE-OUT.
     WRITE-HEADINGS.
         MOVE 0 TO LINE-CT.
         MOVE PAGE-CT TO PAGE-OUT.
         ADD 1 TO PAGE-CT.
         PERFORM MOVE-SPACES.
         WRITE PRINT-LINE BEFORE NEW-PAGE.
         MOVE HEAD1 TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         MOVE HEAD2 TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         MOVE HEAD3 TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
         MOVE HEAD4 TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     HOUSEKEEPING.
         MOVE SPACES TO DATA-LINE.
         PERFORM READ-INPUT.
     READ-FA-FILE.
         MOVE ACCT-IN TO ACCT-HOLD, ACCT-OUT, FA-NOMINAL.
         READ FINANCIAL-ACCT-TABFI INVALID KEY
             MOVE 'ACCT # INVALID *****' TO FA-NAME1
             MOVE SPACES TO FA-NAME2.
         PERFORM MOVE-OUT-AMOUNTS.
         MOVE FA-NAME1 TO FA-NAME-OUT.
         MOVE DATA-LINE TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         MOVE SPACES TO DATA-LINE.
         MOVE FA-NAME2 TO FA-NAME-OUT.
         PERFORM READ-INPUT.
         IF ACCT-IN NOT = TO ACCT-HOLD THEN
             PERFORM WRITE-ACCT-TOTAL
             PERFORM CHECK-LINE-CT
             GO TO READ-FA-FILE.
     WRITE-DATA.
         PERFORM MOVE-OUT-AMOUNTS.
         MOVE DATA-LINE TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         MOVE SPACES TO DATA-LINE.
         PERFORM CHECK-LINE-CT.
         PERFORM READ-INPUT.
         IF ACCT-IN NOT = TO ACCT-HOLD THEN
             PERFORM WRITE-ACCT-TOTAL
             PERFORM READ-FA-FILE.
         GO TO WRITE-DATA.
```

```
MOVE-OUT-AMOUNTS.
    MOVE AMOUNT-IN TO AMOUNT-OUT.
    ADD AMOUNT-IN TO ACCT-TOTAL.
    IF AMOUNT-IN < 0 THEN
        ADD AMOUNT-IN TO CREDIT-TOTAL
    ELSE ADD AMOUNT-IN TO DEBIT-TOTAL.
CHECK-LINE-CT.
    IF LINE-CT NOT < MAX-LINE THEN
        MOVE ACCT-HOLD TO ACCT-OUT
        PERFORM WRITE-HEADINGS.
WRITE-ACCT-TOTAL.
    MOVE ACCT-TOTAL TO ACCT-TOTAL-OUT.
    MOVE ZERO TO ACCT-TOTAL.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    MOVE SPACES TO DATA-LINE.
READ-INPUT.
    READ FINANCIAL-COST-ALLOCATION AT END
        GO TO WRITE-FINAL-TOTALS.
MOVE-SPACES.
    MOVE SPACES TO PRINT-DATA.
PRINT-LINE-OUT.
    WRITE PRINT-LINE BEFORE 1.
    ADD 1 TO LINE-CT.
WRITE-FINAL-TOTALS.
    PERFORM WRITE-ACCT-TOTAL.
    MOVE SPACES TO DATA-LINE.
    MOVE 'DEBIT TOTAL ' TO COMMENT.
    MOVE DEBIT-TOTAL TO AMOUNT-OUT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE 'CREDIT TOTAL' TO COMMENT.
    MOVE CREDIT-TOTAL TO AMOUNT-OUT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
CLOSE-ALL-FILES.
    CLOSE FINANCIAL-COST-ALLOCATION, PRINT-OUT,
        FINANCIAL-ACCT-TABFI.
E-O-J.
    STOP RUN.
```

```
 PGMNAME=WUASPAAC
.SYSIN  DD *
 ID DIVISION.
 PROGRAM-ID. WUASPAAC.
 AUTHOR. ACT SYSTEMS INC.
         SUITE 200
         807 W MORSE BLVD
         WINTER PARK, FLA 32789.
 DATE-WRITTEN.  APRIL 1978.
 DATE-COMPILED. APRIL 1978.
 REMARKS.     THIS PROGRAM MERGES ALL EDIT FILES
              INTO ONE TEMP FILE (MERGED-FILE)
              THEN SUMS UP THE COST BY
              ACCOUNT NUMBERS WITHIN COUNTY CODES.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 SOURCE-COMPUTER. IBM-370.
 OBJECT-COMPUTER. IBM-370.
 SPECIAL-NAMES.
     C01 IS NEW-PAGE.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
     SELECT PRINT-OUT
         ASSIGN TO UT-1403-S-PRINTOUT
         ACCESS MODE IS SEQUENTIAL.
     SELECT MERGED-FILE
         ASSIGN TO UT-3330-S-MERGEDFI
         ACCESS MODE IS SEQUENTIAL.
     SELECT MERGING-FILE
         ASSIGN TO UT-3330-S-MERGERFI
         ACCESS MODE IS SEQUENTIAL.
     SELECT PAY-ROLL-FILE
         ASSIGN TO UT-3330-S-PAYROLL
         ACCESS MODE IS SEQUENTIAL.
     SELECT REQ-STOCK-FILE
         ASSIGN TO UT-3330-S-REQSTOCK
         ACCESS MODE IS SEQUENTIAL.
     SELECT PAY-AUTH-FILE
         ASSIGN TO UT-3330-S-PAYAUTH
         ACCESS MODE IS SEQUENTIAL.
     SELECT MISC-TRANS-FILE
         ASSIGN TO UT-3330-S-MISCTRAN
         ACCESS MODE IS SEQUENTIAL.
     SELECT SERVICE-CONTRACT-FILE
         ASSIGN TO UT-3330-S-SERVCONT
         ACCESS MODE IS SEQUENTIAL.
     SELECT DEPRECIATION-FILE
         ASSIGN TO UT-3330-S-DEPREC
         ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
```

```
FILE SECTION.
FD  PRINT-OUT
         RECORD CONTAINS 133 CHARACTERS
         LABEL RECORDS ARE OMITTED
         DATA RECORD IS PRINT-LINE.
01       PRINT-LINE.
         05  FILLER             PIC X.
         05  PRINT-DATA         PIC X(132).
FD       MERGED-FILE
         BLOCK CONTAINS 20 RECORDS
         RECORD CONTAINS 26 CHARACTERS
         LABEL RECORDS ARE STANDARD
         DATA RECORD IS INPUT-REC.
01       INPUT-REC.
         05  ACCT-NO.
             10  DATE-TITLE-CODE PIC X.
             10  FILLER          PIC X(8).
             10  COUNTY-CODE     PIC X.
         05  FILLER              PIC X(6).
         05  AMOUNT              PIC S9(8)V99.
SD       MERGING-FILE
         RECORD CONTAINS 26 CHARACTERS
         DATA RECORD IS MERGE-REC.
01       MERGE-REC.
         05  MERGE-ACCT.
             10  SORT-ACCT     PIC X(9).
             10  SORT-COUNTY   PIC X.
         05  FILLER            PIC X(16).
FD       PAY-RO  -FILE
         BLOCK CONTAINS 20 RECORDS
         RECORD CONTAINS 26 CHARACTERS
         LABEL RECORDS ARE STANDARD
         DATA RECORD IS PAYROLL-REC.
01       PAYROLL-REC           PIC X(26).
FD       REQ-STOCK-FILE
         BLOCK CONTAINS 20 RECORDS
         RECORD CONTAINS 26 CHARACTERS
         LABEL RECORDS ARE STANDARD
         DATA RECORD IS REQ-REC.
01       REQ-REC               PIC X(26).
FD       PAY-AUTH-FILE
         BLOCK CONTAINS 20 RECORDS
         RECORD CONTAINS 26 CHARACTERS
         LABEL RECORDS ARE STANDARD
         DATA RECORD IS PAYAUTH-REC.
01       PAYAUTH-REC           PIC X(26).
FD       MISC-TRANS-FILE
         BLOCK CONTAINS 20 RECORDS
         RECORD CONTAINS 26 CHARACTERS
         LABEL RECORDS ARE STANDARD
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    DATA RECORD IS MISC-REC.
01  MISC-REC                      PIC X(26).
FD  SERVICE-CONTRACT-FILE
    BLOCK CONTAINS 20 RECORDS
    RECORD CONTAINS 26 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS SERVICE-REC.
01  SERVICE-REC                   PIC X(26).
FD  DEPRECIATION-FILE
    BLOCK CONTAINS 20 RECORDS
    RECORD CONTAINS 26 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS DEPRECIATION-REC.
01  DEPRECIATION-REC              PIC X(26).
WORKING-STORAGE SECTION.
77  LINE-CT                      PIC 99 VALUE 0.
77  MAX-LINE                     PIC 99 VALUE 56.
77  COUNTY-CODE-HOLD             PIC X VALUE SPACES.
77  DEBIT-SUBTOTAL               PIC S9(8)V99 VALUE +0.
77  CREDIT-SUBTOTAL              PIC S9(8)V99 VALUE +0.
77  DEBIT-TOTAL                  PIC S9(8)V99 VALUE +0.
77  CREDIT-TOTAL                 PIC S9(8)V99 VALUE +0.
77  ACCT-TOTAL                   PIC S9(8)V99 VALUE +0.
77  ACCT-HOLD                    PIC X(10) VALUE SPACES.
01  HEAD-1.
    05  FILLER                   PIC X(10) VALUE SPACES.
    05  FILLER                   PIC X(14) VALUE 'ACCOUNT NUMBER'.
    05  FILLER                   PIC X(10) VALUE SPACES.
    05  FILLER                   PIC X(6)  VALUE 'AMOUNT'.
    05  FILLER                   PIC X(92) VALUE SPACES.
01  DATA-LINE.
    05  FILLER                   PIC X(12).
    05  ACCT-OUT                 PIC X(10).
    05  FILLER                   PIC X(7).
    05  AMOUNT-OUT               PIC -(8).--.
    05  FILLER                   PIC X(92) VALUE SPACES.
PROCEDURE DIVISION.
MERGE-FILES.
    MERGE MERGING-FILE ON ASCENDING KEY
            MERGE-ACCT
        USING   PAY-ROLL-FILE
                REQ-STOCK-FILE
                PAY-AUTH-FILE
                SERVICE-CONTRACT-FILE
                MISC-TRANS-FILE
                DEPRECIATION-FILE
        GIVING  MERGED-FILE.
SORT-FILES.
    SORT    MERGING-FILE ON ASCENDING KEY
            SORT-COUNTY
            SORT-ACCT
    USING   MERGED-FILE
    GIVING  MERGED-FILE.
OPEN-FILES.
    OPEN INPUT  MERGED-FILE
        OUTPUT PRINT-OUT.
WRITE-HEADINGS.
    MOVE 0 TO LINE-CT.
    PERFORM MOVE-SPACES.
    WRITE PRINT-LINE BEFORE NEW-PAGE.
    MOVE HEAD-1 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    PERFORM PRINT-LINE-OUT 2 TIMES.
    MOVE SPACES TO DATA-LINE.
READ-INPUT.
    READ MERGED-FILE AT END
        GO TO WRITE-FINAL-TOTALS.
VERIFY-DATA.
    IF DATE-TITLE-CODE = SPACES THEN
        GO TO READ-INPUT.
    IF COUNTY-CODE NOT = COUNTY-CODE-HOLD THEN
        PERFORM WRITE-SUBTOTALS THRU TOP-NEW-PAGE.
START-TOTALING.
    IF ACCT-NO NOT = ACCT-HOLD THEN
        PERFORM WRITE-DATA-LINE.
    ADD AMOUNT TO ACCT-TOTAL.
    GO TO READ-INPUT.
WRITE-DATA-LINE.
    MOVE ACCT-HOLD TO ACCT-OUT.
    MOVE ACCT-TOTAL TO AMOUNT-OUT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE ACCT-NO TO ACCT-HOLD.
    IF ACCT-TOTAL > 0 THEN
        ADD ACCT-TOTAL TO DEBIT-SUBTOTAL
    ELSE ADD ACCT-TOTAL TO CREDIT-SUBTOTAL.
    MOVE ZERO TO ACCT-TOTAL.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    IF LINE-CT > MAX-LINE THEN
        PERFORM WRITE-HEADINGS.
WRITE-SUBTOTALS.
    MOVE ZERO TO LINE-CT.
    PERFORM WRITE-DATA-LINE.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    MOVE 'SUBTOTAL  ' TO ACCT-OUT.
    MOVE ZERO TO AMOUNT-OUT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE '    DEBIT ' TO ACCT-OUT.
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           MOVE DEBIT-SUBTOTAL TO AMOUNT-OUT.
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE '    CREDIT' TO ACCT-OUT.
           MOVE CREDIT-SUBTOTAL TO AMOUNT-OUT.
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           ADD DEBIT-SUBTOTAL TO DEBIT-TOTAL.
           ADD CREDIT-SUBTOTAL TO CREDIT-TOTAL.
           MOVE ZEROS TO DEBIT-SUBTOTAL, CREDIT-SUBTOTAL.
           MOVE COUNTY-CODE TO COUNTY-CODE-HOLD.
       TOP-NEW-PAGE.
           PERFORM WRITE-HEADINGS.
       MOVE-SPACES.
           MOVE SPACES TO PRINT-LINE.
       PRINT-LINE-OUT.
           WRITE PRINT-LINE BEFORE 1.
           ADD 1 TO LINE-CT.
       WRITE-FINAL-TOTALS.
           PERFORM WRITE-SUBTOTALS.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
           MOVE 'GRANDTOTAL' TO ACCT-OUT.
           MOVE ZERO TO AMOUNT-OUT.
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE '    DEBIT ' TO ACCT-OUT.
           MOVE DEBIT-TOTAL TO AMOUNT-OUT.
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE '    CREDIT' TO ACCT-OUT.
           MOVE CREDIT-TOTAL TO AMOUNT-OUT.
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
       CLOSE-FILES.
           CLOSE   MERGED-FILE
                   PRINT-OUT.
       E-O-J.
           STOP RUN.
```

```
      PGMNAME=WUASCAP1
.SYSIN    DD   *
  ID DIVISION.
  PROGRAM-ID.  WUASCAP1.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN. DECEMBER 1977.
  DATE-COMPILED.
  REMARKS. THIS PROGRAM READS THE FINANCIAL COST ALLOCATION
           INTERFACE FILES. EDITS DATA FOR ERRORS AND BUILDS
           TWO FILES ONE FOR RESOLVED COST CENTERS AND ANOTHER
           FOR UNRESOLVED COST CENTERS.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT FINANCIAL-COST-ALLOCATION
          ASSIGN TO UT-3330-S-FICALFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT CROSS-REF-FILE
          ASSIGN TO DA-3330-I-CRTABFI
          ACCESS MODE IS RANDOM
          RECORD KEY IS ACCT-NO
          NOMINAL KEY IS ACCT-NOMINAL.
      SELECT COST-ALLOCATION-RESOLVED
          ASSIGN TO UT-3330-S-RESOCAFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-ALLOCATION-UNRESOLVED
          ASSIGN TO UT-3330-S-UNRSCAFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  PRINT-OUT
      RECORD CONTAINS 133 CHARACTERS
      LABEL RECORDS ARE OMITTED
      DATA RECORD IS PRINT-LINE.
  01  PRINT-LINE.
      05  FILLER            PIC X.
```

```
           05  PRINT-DATA          PIC X(132).
       FD  FINANCIAL-COST-ALLOCATION
           BLOCK CONTAINS 20 RECORDS
           RECORD CONTAINS 26 CHARACTERS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS INPUT-RECS.
       01  INPUT-RECS.
           05  ACCT-NO-IN.
               10  FILLER          PIC X(9).
               10  COUNTY-CODE     PIC X.
           05  COST-CNTR-IN        PIC X(4).
           05  FILLER              PIC X(2).
           05  AMOUNT-IN           PIC S9(8)V99.
       01  FIRST-TWO-RECS.
           05  FILLER              PIC X.
           05  SOURCE-CODE-IN      PIC 9.
           05  TITLE-IN.
               10  DATE-IN         PIC X(18).
               10  FILLER          PIC X(6).
       FD  CROSS-REF-FILE
           BLOCK CONTAINS 4 RECORDS
           RECORD CONTAINS 265 CHARACTERS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS CR-REC.
       01  CR-REC.
           05  ACCT-NO             PIC X(10).
           05  ALLOC-CODE          PIC X.
           05  C-CATS.
               10  C-CAT OCCURS 2 TIMES PIC XX.
           05  NO-OF-CC            PIC 99.
           05  CC-BLK OCCURS 31 TIMES.
               10  COST-CNTR       PIC X(4).
               10  MATCH-CODE      PIC X(4).
       01  CR-REC-1.
           05  FILLER              PIC X(17).
           05  CC-BLK-1 OCCURS 31 TIMES.
               10  FILLER          PIC X(4).
               10  PERCENT         PIC V9999.
       FD  COST-ALLOCATION-RESOLVED
           BLOCK CONTAINS 5 RECORDS
           RECORD CONTAINS 80 CHARACTERS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS RES-REC.
       01  RES-REC.
           05  RES-REC-DATA        PIC X(30).
           05  FILLER              PIC X(50).
       FD  COST-ALLOCATION-UNRESOLVED
           BLOCK CONTAINS 5 RECORDS
           RECORD CONTAINS 80 CHARACTERS
           LABEL RECORDS ARE STANDARD
```

```
     DATA RECORD IS UNRES-REC.
 01  UNRES-REC.
     05  UNRES-REC-DATA    PIC X(30).
     05  FILLER            PIC X(50).
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     05  COUNTY-CODE-IN    PIC X.
     05  FILLER            PIC X(79).
 WORKING-STORAGE SECTION.
 77  LINE-CT               PIC 99   COMP VALUE 0.
 77  PAGE-CT               PIC 9(4) COMP VALUE 1.
 77  MAX-LINE              PIC 99   COMP VALUE 56.
 77  SOURCE-CODE           PIC 9.
 77  ACCT-NOMINAL          PIC X(10) VALUE ZERO.
 77  I                     PIC 99.
 77  PERCENT-3401          PIC V9(4) VALUE ZERO.
 77  PERCENT-2101          PIC V9(4) VALUE ZERO.
 77  HOLD-AMT              PIC S9(8)V99.
 77  COST-CNTR-3401        PIC X(4) VALUE '3401'.
 77  COST-CNTR-2101        PIC X(4) VALUE '2101'.
 77  MATCH-3401            PIC X(4).
 77  MATCH-2101            PIC X(4).
 77  RES-FLAG              PIC 9 VALUE ZERO.
 77  COUNTY-CODE-HOLD      PIC X VALUE SPACES.
 01  ERROR-LIST.
     05  ERR1              PIC X(20) VALUE 'INVALID COST CENTER '.
 01  FILE-NAMES.
     05  FILENAMES1.
         10  FILLER        PIC X(72) VALUE
-                                                     'PAYROLL
-                                                     'REQ OF STOCK
-                                                     'SERVICE
-                                                     'PAYMENT AUTH
-                                                     'MISC TRANS
     05  FILENAMES REDEFINES FILENAMES1.             'DEPRECIATION'.
         10  FILE-NAME OCCURS 6 TIMES PIC X(12).
 01  HEAD-1.
     05  FILLER            PIC X(44) VALUE SPACES.
     05  FILLER            PIC X(34) VALUE 'INITIAL COST ALLOCATION
-                                         ' REPORT OF '.
     05  FILE-NAME-OUT     PIC X(12).
     05  FILLER            PIC X(42) VALUE SPACES.
 01  HEAD-2.
     05  FILLER            PIC X(13) VALUE 'DATE ENDING: '.
     05  DATE-OUT          PIC X(18).
     05  FILLER            PIC X(33) VALUE SPACES.
     05  FILLER            PIC X(3)  VALUE 'FOR'.
```

```
           05  FILLER            PIC X(55) VALUE SPACES.
           05  FILLER            PIC X(6)  VALUE 'PAGE: '.
           05  PAGE-OUT          PIC Z(4).
       01  HEAD-3.
           05  FILLER            PIC X(54) VALUE SPACES.
           05  TITLE-OUT         PIC X(24).
           05  FILLER            PIC X(54) VALUE SPACES.
       01  HEAD-4.
           05  FILLER            PIC X(15) VALUE SPACES.
           05  FILLER            PIC X(10) VALUE 'INPUT DATA'.
           05  FILLER            PIC X(53) VALUE SPACES.
           05  FILLER            PIC X(19) VALUE 'RESOLVED INPUT DATA'.
           05  FILLER            PIC X(35) VALUE SPACES.
       01  HEAD-5.
           05  FILLER            PIC X(7)  VALUE ' ACCT #'.
           05  FILLER            PIC X(4)  VALUE SPACES.
           05  FILLER            PIC X(10) VALUE 'COST/CNTR '.
           05  FILLER            PIC X(8)  VALUE 'COST/CAT'.
           05  FILLER            PIC X(6) VALUE SPACES.
           05  FILLER            PIC X(6) VALUE 'AMOUNT'.
           05  FILLER            PIC X(12) VALUE SPACES.
           05  FILLER            PIC X(9)  VALUE 'COST-CNTR'.
           05  FILLER            PIC X(3)  VALUE SPACES.
           05  FILLER            PIC X(8)  VALUE 'COST-CAT'.
           05  FILLER            PIC X(2)  VALUE SPACES.
           05  FILLER            PIC X(10) VALUE 'MATCH/CODE'.
           05  FILLER            PIC X(5)  VALUE SPACES.
           05  FILLER            PIC X(10) VALUE 'AMOUNT    '.
           05  FILLER            PIC X(8)  VALUE 'RESOLVED'.
           05  FILLER            PIC X(10) VALUE SPACES.
           05  FILLER            PIC X(7)  VALUE 'COMMENT'.
           05  FILLER            PIC X(7)  VALUE SPACES.
       01  DATA-LINE.
           05  ACCT-NO-OUT       PIC X(10).
           05  FILLER            PIC X(3).
           05  COST-CNTR-OUT-1   PIC X(4).
           05  FILLER            PIC X(13).
           05  AMOUNT-OUT-1      PIC -(8).--.
           05  FILLER            PIC X(14).
           05  COST-CNTR-OUT-2   PIC X(4).
           05  FILLER            PIC X(9).
           05  COST-CAT-OUT      PIC XX.
           05  FILLER            PIC X(8).
           05  MATCH-CODE-OUT    PIC X(4).
           05  FILLER            PIC X(3).
           05  AMOUNT-OUT-2      PIC -(8).--.
           05  FILLER            PIC X(7).
           05  RES-OUT           PIC XX.
           05  FILLER            PIC X(7).
           05  COMMENT-OUT       PIC X(20).
```

```
 01  DISK-RECORD.
     05  DISK-ACCT-NO       PIC X(10).
     05  DISK-COST-CNTR.
         10  DISK-ALLOC-CODE PIC X.
         10  FILLER          PIC X(3).
     05  DISK-COST-CAT      PIC XX.
     05  DISK-MATCH-CODE    PIC X(4).
     05  DISK-AMT OCCURS 6 TIMES PIC S9(8)V99.
 PROCEDURE DIVISION.
 OPEN-FILES.
     OPEN OUTPUT PRINT-OUT,
                 COST-ALLOCATION-RESOLVED,
                 COST-ALLOCATION-UNRESOLVED,
           INPUT FINANCIAL-COST-ALLOCATION,
                 CARD-IN
                 CROSS-REF-FILE.
 HOUSE-KEEP.
     MOVE SPACES TO RES-REC, UNRES-REC, DATA-LINE.
*
*    INVALID OPTION CARD OR NO OPITION CARD DEFAULTS
*    TO A BLANK COUNTY CODE
*
 READ-OPTION-CARD.
     READ CARD-IN AT END GO TO FILL-HEADINGS.
     IF COUNTY-CODE-IN = 'C' THEN
         MOVE 'C' TO COUNTY-CODE-HOLD.
 FILL-HEADINGS.
     READ FINANCIAL-COST-ALLOCATION AT END
         GO TO CLOSE-FILES.
     MOVE DATE-IN TO DATE-OUT.
     READ FINANCIAL-COST-ALLOCATION AT END
         GO TO CLOSE-FILES.
     MOVE TITLE-IN TO TITLE-OUT.
     MOVE SOURCE-CODE-IN TO SOURCE-CODE.
     MOVE FILE-NAME (SOURCE-CODE) TO FILE-NAME-OUT.
 WRITE-HEADINGS.
     MOVE PAGE-CT TO PAGE-OUT.
     ADD 1 TO PAGE-CT.
     MOVE 0 TO LINE-CT.
     PERFORM MOVE-SPACES.
     WRITE PRINT-LINE BEFORE NEW-PAGE.
     MOVE HEAD-1 TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     MOVE HEAD-2 TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     MOVE HEAD-3 TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     PERFORM MOVE-SPACES.
     PERFORM PRINT-LINE-OUT 2 TIMES.
     MOVE HEAD-4 TO PRINT-DATA.
```

```
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES.
           PERFORM PRINT-LINE-OUT 2 TIMES.
           MOVE HEAD-5 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
       READ-INPUT.
           READ FINANCIAL-COST-ALLOCATION AT END
               GO TO CLOSE-FILES.
           IF AMOUNT-IN = 0 THEN
               GO TO READ-INPUT.
           IF COUNTY-CODE NOT = TO COUNTY-CODE-HOLD THEN
               GO TO READ-INPUT.
       START-EDIT.
           MOVE ACCT-NO-IN TO ACCT-NOMINAL.
           READ CROSS-REF-FILE INVALID KEY
                MOVE SPACES TO DATA-LINE
                MOVE 'ACCT # NOT FOUND     ' TO COMMENT-OUT
                MOVE ACCT-NO-IN TO ACCT-NO-OUT
                MOVE DATA-LINE TO PRINT-DATA
                PERFORM  PRINT-LINE-OUT
                MOVE SPACES TO DATA-LINE
               PERFORM PAGE-OVFLOW
                GO TO READ-INPUT.
       CHECK-4-VALID-COST-CNTR.
           EXAMINE COST-CNTR-IN REPLACING ALL ' ' BY '0'.
           IF (COST-CNTR-IN NOT = ZERO) AND (ALLOC-CODE NOT = 'H') THEN
               PERFORM CHECK-COST-CENTERS
           ELSE GO TO CHECK-ALLOC-CODE.
           IF RES-FLAG = 0 THEN
               MOVE 'I' TO ALLOC-CODE
               GO TO RESOLVED-CC.
       CHECK-ALLOC-CODE.
           IF ALLOC-CODE      = 'A' OR 'H' OR 'I' OR 'J' THEN
               GO TO RESOLVED-CC
           ELSE GO TO UN-RESOLVED-CC.
       RESOLVED-CC.
           MOVE ACCT-NO-IN TO DISK-ACCT-NO, ACCT-NO-OUT.
           IF COST-CNTR-IN NOT = ZEROES THEN
               MOVE COST-CNTR-IN TO COST-CNTR-OUT-1
           ELSE MOVE SPACES TO COST-CNTR-OUT-1.
           PERFORM CHECK-COST-CAT.
           MOVE AMOUNT-IN TO AMOUNT-OUT-1.
           IF ALLOC-CODE NOT = 'H' THEN
               GO TO CHECK-A-I-J.
           IF PERCENT-3401 = ZERO THEN
               PERFORM GET-H-PERCENTAGES.
           MULTIPLY AMOUNT-IN BY PERCENT-3401 GIVING HOLD-AMT.
           MOVE HOLD-AMT TO DISK-AMT (1), AMOUNT-OUT-2.
           MOVE MATCH-3401 TO DISK-MATCH-CODE, MATCH-CODE-OUT.
           MOVE COST-CNTR-3401 TO DISK-COST-CNTR, COST-CNTR-OUT-2.
           PERFORM WRITE-RES-REC.
           MOVE SPACES TO ACCT-NO-OUT, COST-CNTR-OUT-1.
           MOVE ACCT-NO-IN TO DISK-ACCT-NO.
           MOVE ZEROS TO AMOUNT-OUT-1.
           MULTIPLY AMOUNT-IN BY PERCENT-2101 GIVING HOLD-AMT.
           MOVE HOLD-AMT TO DISK-AMT (1), AMOUNT-OUT-2.
           MOVE MATCH-2101 TO DISK-MATCH-CODE, MATCH-CODE-OUT.
           MOVE COST-CNTR-2101 TO DISK-COST-CNTR, COST-CNTR-OUT-2.
           PERFORM CHECK-COST-CAT.
           PERFORM WRITE-RES-REC.
           GO TO READ-INPUT.
       CHECK-A-I-J.
           IF (ALLOC-CODE = 'I') AND (COST-CNTR-IN NOT = SPACES OR ZERO)
               THEN MOVE COST-CNTR-IN TO COST-CNTR (1)
               MOVE SPACES TO COMMENT-OUT.
           MOVE AMOUNT-IN TO DISK-AMT (1), AMOUNT-OUT-2.
           MOVE COST-CNTR (1) TO DISK-COST-CNTR, COST-CNTR-OUT-2.
           MOVE MATCH-CODE (1) TO DISK-MATCH-CODE, MATCH-CODE-OUT.
           PERFORM WRITE-RES-REC.
           GO TO READ-INPUT.
       WRITE-RES-REC.
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE DISK-RECORD TO RES-REC-DATA.
           WRITE RES-REC.
           MOVE SPACES TO DISK-RECORD, DATA-LINE.
           PERFORM PAGE-OVFLOW.
       UN-RESOLVED-CC.
           MOVE ACCT-NO-IN TO DISK-ACCT-NO, ACCT-NO-OUT.
           IF COST-CNTR-IN NOT = ZEROES THEN
               MOVE COST-CNTR-IN TO COST-CNTR-OUT-1
           ELSE MOVE SPACES TO COST-CNTR-OUT-1.
           PERFORM CHECK-COST-CAT.
           MOVE AMOUNT-IN TO AMOUNT-OUT-1, AMOUNT-OUT-2, DISK-AMT (1).
           MOVE SPACES TO DISK-MATCH-CODE, MATCH-CODE-OUT.
           MOVE ALLOC-CODE TO DISK-ALLOC-CODE.
           MOVE 'NO' TO RES-OUT
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE DISK-RECORD TO UNRES-REC-DATA.
           WRITE UNRES-REC.
           MOVE SPACES TO DISK-RECORD, DATA-LINE.
           PERFORM PAGE-OVFLOW.
           GO TO READ-INPUT.
       PAGE-OVFLOW.
           IF LINE-CT NOT < MAX-LINE THEN
               PERFORM WRITE-HEADINGS.
       MOVE-SPACES.
           MOVE SPACES TO PRINT-LINE.
```

```
PRINT-LINE-OUT.
    WRITE PRINT-LINE BEFORE 1.
    ADD 1 TO LINE-CT.
CHECK-COST-CAT.
    IF SOURCE-CODE = 1 THEN
        MOVE C-CAT (2) TO DISK-COST-CAT, COST-CAT-OUT
    ELSE MOVE C-CAT (1) TO DISK-COST-CAT, COST-CAT-OUT.
CHECK-COST-CENTERS.
    MOVE 0 TO RES-FLAG.
    PERFORM CHECK-COST-CNTR THRU CHECK-COST-CNTR-END
        VARYING I FROM 1 BY 1 UNTIL
        I > NO-OF-CC.
CHECK-COST-CNTR.
    IF COST-CNTR (I) = TO COST-CNTR-IN THEN
        ADD NO-OF-CC TO I
        GO TO CHECK-COST-CNTR-END.
    IF I = TO NO-OF-CC THEN
        MOVE 1 TO RES-FLAG.
CHECK-COST-CNTR-END.
    EXIT.
GET-H-PERCENTAGES.
    IF COST-CNTR (1) = '3401' THEN
        MOVE  MATCH-CODE (1) TO MATCH-3401
        MOVE PERCENT (2) TO PERCENT-3401
        MOVE  MATCH-CODE (3) TO MATCH-2101
        MOVE PERCENT (4) TO PERCENT-2101
    ELSE
        MOVE  MATCH-CODE (1) TO MATCH-2101
        MOVE PERCENT (2) TO PERCENT-2101
        MOVE  MATCH-CODE (3) TO MATCH-3401
        MOVE PERCENT (4) TO PERCENT-3401.
CLOSE-FILES.
    CLOSE  FINANCIAL-COST-ALLOCATION, CROSS-REF-FILE,
           COST-ALLOCATION-RESOLVED, COST-ALLOCATION-UNRESOLVED,
           CARD-IN, PRINT-OUT.
E-O-J.
    STOP RUN.
```

```
   PGMNAME=WUASCAP2
.SYSIN    DD  *
 ID DIVISION.
 PROGRAM-ID. WUASCAP2
 AUTHOR. ACT SYSTEMS, INC
     SUITE 200
     807 W MORSE BLVD
     WINTER PARK, FL 32789.
 DATE-WRITTEN.  DEC 14, 1977.
 DATE-COMPILED.
 REMARKS.     THIS PROGRAM READS THE RESOLVED FILE
       (RESOCAFI) AND BUILDS A TABLE OF COST
       CENTER VALUES TO BE USED IN CAP3.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 SOURCE-COMPUTER. IBM-370.
 OBJECT-COMPUTER. IBM-370.
 SPECIAL-NAMES.
   C01 IS NEW-PAGE.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
   SELECT PRINT-OUT
     ASSIGN TO UR-1403-S-PRINTOUT
     ACCESS MODE IS SEQUENTIAL.
   SELECT COST-ALLOCATION-RESOLVED
     ASSIGN TO UT-3330-S-RESOCAFI
     ACCESS MODE IS SEQUENTIAL.
   SELECT COST-ALLOCATION-RESOLVED-COSTS
     ASSIGN TO UT-3330-S-RECTABFI
     ACCESS MODE IS SEQUENTIAL.
   SELECT FILE-SORT
     ASSIGN TO UT-3330-S-FILESORT
     ACCESS MODE IS SEQUENTIAL.
   SELECT CARD-IN
     ASSIGN TO UR-2540R-S-CARDIN
     ACCESS MODE IS SEQUENTIAL.
DATA DIVISION.
FILE SECTION.
FD  PRINT-OUT
  RECORD CONTAINS 133 CHARACTERS
  LABEL RECORDS ARE OMITTED
  DATA RECORD IS PRINT-LINE.
01  PRINT-LINE.
  05  FILLER            PIC X.
  05  PRINT-DATA        PIC X(80).
  05  FILLER            PIC X(52).
FD  COST-ALLOCATION-RESOLVED
  BLOCK CONTAINS 5 RECORDS
  RECORD CONTAINS 80 CHARACTERS
  LABEL RECORDS ARE STANDARD
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           DATA RECORD IS RES-REC.
       01  RES-REC.
           05  FILLER              PIC X(10).
           05  COST-CNTR-IN        PIC X(4).
           05  FILLER              PIC X(6).
           05  AMOUNT OCCURS 6 TIMES PIC S9(8)V99.
       FD  COST-ALLOCATION-RESOLVED-COSTS
           BLOCK CONTAINS 0 RECORDS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS RES-COSTS.
       01  RES-COSTS.
           05  RECORD-COUNT.
               10  NO-OF-RECS      PIC 9(2).
               10  FILLER          PIC X(12).
           05  RES-COST-REC OCCURS 1 TO 99 TIMES
               DEPENDING ON NO-OF-RECS
               ASCENDING KEY IS COST-CNTR
               INDEXED BY CC.
               10  COST-CNTR       PIC X(4).
               10  CC-AMOUNT       PIC S9(8)V99.
       SD  FILE-SORT
           RECORD CONTAINS 80 CHARACTERS
           DATA RECORD IS SORT-INPUT.
       01  SORT-INPUT.
           05  FILLER              PIC X(10).
           05  S-COST-CNTR         PIC X(4).
           05  FILLER              PIC X(66).
       FD  CARD-IN
           RECORD CONTAINS 80 CHARACTERS
           LABEL RECORDS ARE OMITTED
           DATA RECORD IS INPUT-CARD.
       01  INPUT-CARD.
           05  DATE-IN             PIC X(18).
           05  TITLE-IN            PIC X(24).
           05  FILLER              PIC X(38).
       WORKING-STORAGE SECTION.
       77  LINE-CT                 PIC 9(2) COMP VALUE 0.
       77  PAGE-CT                 PIC 9(4) COMP VALUE 0.
       77  MAX-LINE                PIC 9(2) COMP VALUE 56.
       77  COST-CNTR-HOLD          PIC X(4) VALUE ZERO.
       77  AMOUNT-ACCUM            PIC S9(8)V99 VALUE 0.
       77  COST-CNTR-CT            PIC 99 VALUE 0.
       01  HEAD-1.
           05  FILLER              PIC X(36) VALUE SPACES.
           05  FILLER       PIC X(26) VALUE 'TOTAL COST BY COST CENTERS'.
           05  FILLER              PIC X(18) VALUE SPACES.
       01  HEAD-2.
           05  FILLER              PIC X(13) VALUE 'DATE ENDING: '.
           05  DATE-OUT            PIC X(18).
           05  FILLER              PIC X(17) VALUE SPACES.
           05  FILLER              PIC X(3)  VALUE 'FOR'.
           05  FILLER              PIC X(19) VALUE SPACES.
           05  FILLER              PIC X(6)  VALUE 'PAGE: '.
           05  PAGE-OUT            PIC ZZZ9.
       01  HEAD-3.
           05  FILLER              PIC X(37) VALUE SPACES.
           05  TITLE-OUT           PIC X(24).
           05  FILLER              PIC X(19) VALUE SPACES.
       01  HEAD-4.
           05  FILLER              PIC X(23) VALUE SPACES.
           05  FILLER              PIC X(11) VALUE 'COST CENTER'.
           05  FILLER              PIC X(26) VALUE SPACES.
           05  FILLER              PIC X(5) VALUE 'VALUE'.
           05  FILLER              PIC X(15) VALUE SPACES.
       01  DATA-LINE.
           05  FILLER              PIC X(27) VALUE SPACES.
           05  COST-CNTR-OUT       PIC Z(4).
           05  FILLER              PIC X(23).
           05  AMOUNT-OUT          PIC Z(8).99CR.
           05  FILLER              PIC X(13).
       PROCEDURE DIVISION.
       OPEN-IO-FILES.
           OPEN INPUT  CARD-IN
                OUTPUT PRINT-OUT
                       COST-ALLOCATION-RESOLVED-COSTS.
       SORT-RES-FILE.
           SORT FILE-SORT ON ASCENDING KEY
               S-COST-CNTR
           USING   COST-ALLOCATION-RESOLVED
           GIVING  COST-ALLOCATION-RESOLVED.
       OPEN-CAR-FILE.
           OPEN INPUT COST-ALLOCATION-RESOLVED.
       HOUSE-KEEP.
           PERFORM MOVE-SPACES.
       READ-CARD-IN.
           READ CARD-IN AT END
               MOVE 'NO DATE CARD ** JOB ABORTED' TO PRINT-DATA
               PERFORM PRINT-LINE-OUT
               GO TO CLOSE-IO-FILES.
           MOVE DATE-IN TO DATE-OUT.
           MOVE TITLE-IN TO TITLE-OUT.
       WRITE-HEADINGS.
           ADD 1  TO PAGE-CT.
           MOVE 0 TO LINE-CT.
           MOVE PAGE-CT TO PAGE-OUT
           WRITE PRINT-LINE BEFORE NEW-PAGE.
           MOVE HEAD-1 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-2 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-3 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES.
           PERFORM PRINT-LINE-OUT 2 TIMES.
           MOVE HEAD-4 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
       SET-POINTER.
           SET CC TO 1.
       READ-INPUT.
           READ COST-ALLOCATION-RESOLVED AT END
               GO TO WRITE-COST-TABLE.
       START-TOTALING.
           MOVE COST-CNTR-IN TO COST-CNTR (CC), COST-CNTR-OUT,
           COST-CNTR-HOLD.
       ADD-AMOUNTS.
           ADD AMOUNT (1) TO AMOUNT-ACCUM
           PERFORM READ-INPUT.
           IF COST-CNTR-IN NOT = COST-CNTR-HOLD THEN
               PERFORM WRITE-COST-CNTR
               GO TO START-TOTALING
           ELSE GO TO ADD-AMOUNTS.
       WRITE-COST-CNTR.
           MOVE AMOUNT-ACCUM TO AMOUNT-OUT, CC-AMOUNT (CC).
           MOVE ZERO TO AMOUNT-ACCUM.
           SET CC UP BY 1.
           ADD 1 TO COST-CNTR-CT.
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           IF LINE-CT NOT < MAX-LINE THEN
               PERFORM WRITE-HEADINGS.
       MOVE-SPACES.
           MOVE SPACES TO PRINT-LINE.
       PRINT-LINE-OUT.
           WRITE PRINT-LINE BEFORE 1.
           ADD 1 TO LINE-CT.
       WRITE-COST-TABLE.
           MOVE COST-CNTR-CT TO NO-OF-RECS.
           PERFORM WRITE-COST-CNTR.
           WRITE RES-COSTS.
       CLOSE-IO-FILES.
           CLOSE   COST-ALLOCATION-RESOLVED
                   COST-ALLOCATION-RESOLVED-COSTS
                   CARD-IN
                   PRINT-OUT.
       E-O-J.
           STOP RUN.
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      PGMNAME=WUASCAP3
.SYSIN    DD  *
  ID DIVISION.
  PROGRAM-ID. WUASCAP3.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN.  DEC 15, 1977.
  DATE-COMPILED.
  REMARKS.     THIS PROGRAM READS THE UNRESOLVED FILE
               (UNRSCAFI) AND USING THE TABLE OF COST
               CENTER VALUES, RESOLVES THE FILE AND
               ADDS THE RESOLVED RECORDS TO THE RESOLVED
               FILE (RESOCAFI).
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-ALLOCATION-RESOLVED
          ASSIGN TO UT-3330-S-RESOCAFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-ALLOCATION-UNRESOLVED
          ASSIGN TO UT-3330-S-UNRSCAFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-ALLOCATION-RESOLVED-COSTS
          ASSIGN TO UT-3330-S-RECTABFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT CROSS-REF-FILE
          ASSIGN TO DA-3330-I-CRTABFI
          ACCESS MODE IS RANDOM
          RECORD KEY IS CRF-ACCT-NO
          NOMINAL KEY IS ACCT-NOMINAL.
      SELECT FILE-SORT
          ASSIGN TO UT-3330-S-FILESORT
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  CARD-IN
      RECORD CONTAINS 80 CHARACTERS
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            LABEL RECORDS ARE OMITTED
            DATA RECORD IS INPUT-CARD.
        01  INPUT-CARD.
            05  DATE-IN           PIC X(18).
            05  TITLE-IN          PIC X(24).
            05  FILLER            PIC X(38).
        FD  PRINT-OUT
            RECORD CONTAINS 133 CHARACTERS
            LABEL RECORDS ARE OMITTED
            DATA RECORD IS PRINT-LINE.
        01  PRINT-LINE.
            05  FILLER            PIC X.
            05  PRINT-DATA        PIC X(132).
        FD  COST-ALLOCATION-RESOLVED
            BLOCK CONTAINS 5 RECORDS
            RECORD CONTAINS 80 CHARACTERS
            LABEL RECORDS ARE STANDARD
            DATA RECORD IS RES-REC.
        01  RES-REC.
            05  RES-ACCT-NO       PIC X(10).
            05  RES-COST-CNTR     PIC X(4).
            05  RES-COST-CAT      PIC XX.
            05  RES-MATCH-CODE    PIC X(4).
            05  RES-AMTS OCCURS 6 TIMES PIC S9(8)V99.
        FD  COST-ALLOCATION-UNRESOLVED
            BLOCK CONTAINS 5 RECORDS
            RECORD CONTAINS 80 CHARACTERS
            LABEL RECORDS ARE STANDARD
            DATA RECORD IS UNRES-REC.
        01  UNRES-REC.
            05  ACCT-NO           PIC X(10).
            05  ALLOC-CODE        PIC X.
            05  FILLER            PIC X(3).
            05  COST-CAT          PIC XX.
            05  MATCH-CODE        PIC 9(4).
            05  AMTS OCCURS 6 TIMES PIC S9(8)V99.
        FD  COST-ALLOCATION-RESOLVED-COSTS
            BLOCK CONTAINS 0 RECORDS
            LABEL RECORDS ARE STANDARD
            DATA RECORD IS RES-COST-RECORD.
        01  RES-COST-RECORD.
            05  RECORD-COUNT.
                10  NO-OF-RECS    PIC 9(2).
                10  FILLER        PIC X(12).
            05  RES-COSTS     OCCURS 1 TO 99 TIMES
                DEPENDING ON NO-OF-RECS
                ASCENDING KEY IS COST-CNTR
                INDEXED BY CC.
                10  COST-CNTR     PIC X(4).
                10  CC-AMOUNT     PIC S9(8)V99.
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 FD  CROSS-REF-FILE
     BLOCK CONTAINS 4 RECORDS
     RECORD CONTAINS 265 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS CR-REC.
 01  CR-REC.
     05  CRF-ACCT-NO        PIC X(10).
     05  CRF-ALLOC-CODE     PIC X.
     05  C-CATS.
         10  C-CAT OCCURS 2 TIMES PIC XX.
     05  NO-OF-CC           PIC 99.
     05  CC-BLK OCCURS 31 TIMES.
         10  CRF-COST-CNTR  PIC X(4).
         10  CRF-MATCH-CODE PIC X(4).
 SD  FILE-SORT
     RECORD CONTAINS 80 CHARACTERS
     DATA RECORD IS SORT-INPUT.
 01  SORT-INPUT.
     05  S-ACCT-NO          PIC X(10).
     05  FILLER             PIC X(70).
 WORKING-STORAGE SECTION.
 77  LINE-CT                PIC 99 COMP VALUE 0.
 77  PAGE-CT                PIC 9(4) COMP VALUE 0.
 77  MAX-LINE               PIC 9(2) COMP VALUE 56.
 77  ACCT-NOMINAL           PIC X(10) VALUE ZERO.
 77  AMT-HOLD               PIC S9(8)V99.
 77  AMT-HOLD-OVFLOW        PIC S9(8)V99.
 77  ACCT-HOLD              PIC X(10).
 77  ALLOC-CODE-HOLD        PIC X.
 77  I                      PIC 99.
 77  J                      PIC 9 COMP.
 77  SLASH                  PIC X VALUE '/'.
 77  COMMON-AMOUNTS-ACCUM   PIC S9(8)V99.
 77  SEARCH-NO              PIC X(4).
 77  PERCENT-100            PIC S9V99 VALUE  +1.
 77  SUBTOTAL               PIC S9(8)V99 VALUE +0.
 01  HEAD-1.
     05  FILLER             PIC X(50) VALUE SPACES.
     05  FILLER             PIC X(32) VALUE 'UNRESOLVED COST CENTERS
-                                       ' RESOLVED'.
     05  FILLER             PIC X(50) VALUE SPACES.
 01  HEAD-2.
     05  FILLER             PIC X(13) VALUE 'DATE ENDING: '.
     05  DATE-OUT           PIC X(18).
     05  FILLER             PIC X(33) VALUE SPACES.
     05  FILLER             PIC X(3)  VALUE 'FOR'.
     05  FILLER             PIC X(55) VALUE SPACES.
     05  FILLER             PIC X(6)  VALUE 'PAGE: '.
     05  PAGE-OUT           PIC Z(4).
 01  HEAD-3.
```

```
           05  FILLER              PIC X(54) VALUE SPACES.
           05  TITLE-OUT           PIC X(24).
           05  FILLER              PIC X(54) VALUE SPACES.
       01  HEAD-4.
           05  FILLER              PIC X(8)  VALUE ' ACCOUNT'.
           05  FILLER              PIC X(5)  VALUE SPACES.
           05  FILLER              PIC X(4)  VALUE 'COST'.
           05  FILLER              PIC X(3)  VALUE SPACES.
           05  FILLER              PIC X(5)  VALUE 'ALLOC'.
           05  FILLER              PIC X(3)  VALUE SPACES.
           05  FILLER              PIC X(5)  VALUE 'TOTAL'.
           05  FILLER              PIC X(17) VALUE SPACES.
           05  FILLER              PIC X(41) VALUE 'RESOLVED AMOUNT ALLOCAT
      -                                        'ED COST CENTERS(S)'.
           05  FILLER              PIC X(41) VALUE SPACES.
       01  HEAD-5.
           05  FILLER              PIC X(7)  VALUE ' NUMBER'.
           05  FILLER              PIC X(4)  VALUE SPACES.
           05  FILLER              PIC X(8)  VALUE 'CATEGORY'.
           05  FILLER              PIC X(2)  VALUE SPACES.
           05  FILLER              PIC X(4)  VALUE 'CODE'.
           05  FILLER              PIC X(3)  VALUE SPACES.
           05  FILLER              PIC X(6)  VALUE 'AMOUNT'.
           05  FILLER              PIC X(98) VALUE SPACES.
       01  DATA-LINE.
           05  ACCT-NO-OUT         PIC X(10).
           05  FILLER              PIC X(4).
           05  COST-CAT-OUT        PIC X(2).
           05  FILLER              PIC X(6).
           05  ALLOC-CODE-OUT      PIC X.
           05  AMOUNT-OUT          PIC -(7)9.99.
           05  RES-DATA OCCURS 6 TIMES.
               10  AMT-OUT         PIC -(7)9.99.
               10  SLASH-OUT        PIC X.
               10  COST-CNTR-OUT PIC X(4).
       01  B-PERCENTAGES.
           05  B-PERCENT OCCURS 15 TIMES PIC 9V99.
       01  C-PERCENTAGES.
           05  C-PERCENT OCCURS 15 TIMES PIC 9V99.
       01  D-PERCENTAGES.
           05  D-PERCENT OCCURS 15 TIMES PIC 9V99.
       01  E-PERCENTAGES.
           05  E-PERCENT OCCURS 15 TIMES PIC 9V99.
       01  F-PERCENTAGES.
           05  F-PERCENT OCCURS 15 TIMES PIC 9V99.
       01  G-PERCENTAGES.
           05  G-PERCENT OCCURS 15 TIMES PIC 9V99.
       01  COMMON-PERCENTAGES.
           05  COMMON-PERCENT OCCURS 15 TIMES PIC 9V99.
       01  COMMON-AMOUNTS.
```

```
        05  COMMON-AMT OCCURS 13 TIMES PIC S9(8)V99.
 PROCEDURE DIVISION.
 OPEN-IO-FILES.
        OPEN INPUT  CARD-IN.
                    COST-ALLOCATION-RESOLVED-COSTS.
                    CROSS-REF-FILE.
             OUTPUT COST-ALLOCATION-RESOLVED.
                    PRINT-OUT.
 SORT-UNRES-FILE.
        SORT FILE-SORT ON ASCENDING KEY
             S-ACCT-NO
        USING  COST-ALLOCATION-UNRESOLVED
        GIVING COST-ALLOCATION-UNRESOLVED.
 OPEN-CAU-FILE.
        OPEN INPUT COST-ALLOCATION-UNRESOLVED.
 FILL-HEADING.
        READ CARD-IN AT END MOVE
            '*** NO DATE/TITLE CARD *** JOB ABORTED ***'
            TO PRINT-DATA,
            PERFORM PRINT-LINE-OUT
            GO TO CLOSE-IO-FILES.
        MOVE DATE-IN TO DATE-OUT.
        MOVE TITLE-IN TO TITLE-OUT.
 READ-COST-TABLE-IN.
        READ COST-ALLOCATION-RESOLVED-COSTS AT END MOVE
            '*** COST TABLE CONTAINS NO DATA ** JOB ABORTED ***'
            TO PRINT-DATA
            PERFORM PRINT-LINE-OUT
            GO TO CLOSE-IO-FILES.
 WRITE-HEADINGS.
        ADD 1 TO PAGE-CT.
        MOVE PAGE-CT TO PAGE-OUT.
        MOVE ZERO TO LINE-CT.
        PERFORM MOVE-SPACES.
        WRITE PRINT-LINE BEFORE NEW-PAGE.
        MOVE HEAD-1 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE HEAD-2 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE HEAD-3 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        PERFORM MOVE-SPACES.
        PERFORM PRINT-LINE-OUT 2 TIMES.
        MOVE HEAD-4 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE HEAD-5 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
 HOUSE-KEEP.
        MOVE SPACES TO DATA-LINE.
```

```
    MOVE ZERO TO COMMON-PERCENTAGES,
        B-PERCENTAGES,
        C-PERCENTAGES,
        D-PERCENTAGES,
        E-PERCENTAGES,
        F-PERCENTAGES,
        G-PERCENTAGES.
READ-INPUT.
    READ COST-ALLOCATION-UNRESOLVED AT END
        GO TO WRITE-SUBTOTAL.
START-RESOLVING.
    MOVE ACCT-NO TO ACCT-HOLD, ACCT-NOMINAL, RES-ACCT-NO,
            ACCT-NO-OUT.
    MOVE ALLOC-CODE TO ALLOC-CODE-HOLD, ALLOC-CODE-OUT.
    MOVE COST-CAT TO RES-COST-CAT, COST-CAT-OUT.
    MOVE AMTS (1) TO AMOUNT-OUT, AMT-HOLD, AMT-HOLD-OVFLOW.
    ADD AMTS (1) TO SUBTOTAL.
READ-CRF.
    READ CROSS-REF-FILE INVALID KEY
        MOVE DATA-LINE TO PRINT-DATA
        PERFORM PRINT-LINE-OUT
        MOVE '*** ABOVE ACCOUNT NUMBER NOT FOUND ***' TO
        PRINT-DATA
        PERFORM PRINT-LINE-OUT
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT
        GO TO READ-INPUT.
    IF ALLOC-CODE = 'B' THEN
        GO TO ALLOCATION-B.
    IF ALLOC-CODE = 'C' THEN
        GO TO ALLOCATION-C.
    IF ALLOC-CODE = 'D' THEN
        GO TO ALLOCATION-D.
    IF ALLOC-CODE = 'E' THEN
        GO TO ALLOCATION-E.
    IF ALLOC-CODE = 'F' THEN
        GO TO ALLOCATION-F.
    IF ALLOC-CODE = 'G' THEN
        GO TO ALLOCATION-G.
INVALID-ALLOC-CODE-FALLTHRU.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE '*** ABOVE RECORD HAS INVALID ALLOC CODE ***'
        TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    GO TO READ-INPUT.
ALLOCATION-B.
    IF  B-PERCENTAGES = ZERO THEN
        PERFORM GET-B-PERCENTAGES.
    PERFORM MOVE-B-PERCENT-TO-COMMON VARYING I
```

```
          FROM 1 BY 1 UNTIL I > NO-OF-CC.
 ALLOCATION-B-1.
     PERFORM WRITE-RESOLVED-COSTS THRU WRITE-RESOLVED-COSTS-END.
     PERFORM READ-INPUT.
     IF ACCT-NO = TO ACCT-HOLD THEN
          PERFORM START-RESOLVING
          GO TO ALLOCATION-B-1
     ELSE GO TO START-RESOLVING.
 ALLOCATION-C.
     IF  C-PERCENTAGES = ZERO THEN
          PERFORM GET-C-PERCENTAGES.
     PERFORM MOVE-C-PERCENT-TO-COMMON VARYING I
          FROM 1 BY 1 UNTIL I > NO-OF-CC.
 ALLOCATION-C-1.
     PERFORM WRITE-RESOLVED-COSTS THRU WRITE-RESOLVED-COSTS-END.
     PERFORM READ-INPUT.
     IF ACCT-NO = TO ACCT-HOLD THEN
          PERFORM START-RESOLVING
          GO TO ALLOCATION-C-1
     ELSE GO TO START-RESOLVING.
 ALLOCATION-D.
     IF  D-PERCENTAGES = ZERO THEN
          PERFORM GET-D-PERCENTAGES.
     PERFORM MOVE-D-PERCENT-TO-COMMON VARYING I
          FROM 1 BY 1 UNTIL I > NO-OF-CC.
 ALLOCATION-D-1.
     PERFORM WRITE-RESOLVED-COSTS THRU WRITE-RESOLVED-COSTS-END.
     PERFORM READ-INPUT.
     IF ACCT-NO = TO ACCT-HOLD THEN
          PERFORM START-RESOLVING
          GO TO ALLOCATION-D-1
     ELSE GO TO START-RESOLVING.
 ALLOCATION-E.
     IF  E-PERCENTAGES = ZERO THEN
          PERFORM GET-E-PERCENTAGES.
     PERFORM MOVE-E-PERCENT-TO-COMMON VARYING I
          FROM 1 BY 1 UNTIL I > NO-OF-CC.
 ALLOCATION-E-1.
     PERFORM WRITE-RESOLVED-COSTS THRU WRITE-RESOLVED-COSTS-END.
     PERFORM READ-INPUT.
     IF ACCT-NO = TO ACCT-HOLD THEN
          PERFORM START-RESOLVING
          GO TO ALLOCATION-E-1
     ELSE GO TO START-RESOLVING.
 ALLOCATION-F.
     IF  F-PERCENTAGES = ZERO THEN
          PERFORM GET-F-PERCENTAGES.
     PERFORM MOVE-F-PERCENT-TO-COMMON VARYING I
          FROM 1 BY 1 UNTIL I > NO-OF-CC.
 ALLOCATION-F-1.
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```
    PERFORM WRITE-RESOLVED-COSTS THRU WRITE-RESOLVED-COSTS-END.
    PERFORM READ-INPUT.
    IF ACCT-NO = ACCT-HOLD THEN
        PERFORM START-RESOLVING
        GO TO ALLOCATION-F-1
    ELSE GO TO START-RESOLVING.
ALLOCATION-G.
    IF  G-PERCENTAGES = ZERO THEN
        PERFORM GET-G-PERCENTAGES.
    PERFORM MOVE-G-PERCENT-TO-COMMON VARYING I
        FROM 1 BY 1 UNTIL I > NO-OF-CC.
ALLOCATION-G-1.
    PERFORM WRITE-RESOLVED-COSTS THRU WRITE-RESOLVED-COSTS-END.
    PERFORM READ-INPUT.
    IF ACCT-NO = ACCT-HOLD THEN
        PERFORM START-RESOLVING
        GO TO ALLOCATION-G-1
    ELSE GO TO START-RESOLVING.
MOVE-SPACES.
    MOVE SPACES TO PRINT-LINE.
PRINT-LINE-OUT.
    WRITE PRINT-LINE BEFORE 1.
    ADD 1 TO LINE-CT.
GET-COMMON-PERCENTAGES.
    MOVE ZEROS TO COMMON-AMOUNTS, COMMON-AMOUNTS-ACCUM.
    PERFORM SEARCH-COST-TABLE VARYING I FROM 1 BY 1
        UNTIL I > NO-OF-CC.
    PERFORM TOTAL-AMTS VARYING I FROM 1 BY 1
        UNTIL I > NO-OF-CC.
    IF COMMON-AMOUNTS-ACCUM = ZEROS THEN
        PERFORM MOVE-IN-EQUAL-PERCENTAGES VARYING
        I FROM 1 BY 1 UNTIL I > NO-OF-CC
    ELSE MOVE 1 TO PERCENT-100
        PERFORM MOVE-IN-PERCENTAGES VARYING
        I FROM 1 BY 1 UNTIL I > NO-OF-CC
SEARCH-COST-TABLE.
    MOVE CRF-COST-CNTR (I) TO SEARCH-NO.
    SET CC TO 1.
    SEARCH ALL RES-COSTS AT END
        MOVE ZERO TO COMMON-AMT (I)
    WHEN COST-CNTR (CC) = SEARCH-NO
        MOVE CC-AMOUNT (CC) TO COMMON-AMT (I).
TOTAL-AMTS.
    IF COMMON-AMT (I) < ZERO THEN
        MOVE ZERO TO COMMON-AMT (I).
    ADD COMMON-AMT (I) TO COMMON-AMOUNTS-ACCUM.
MOVE-IN-EQUAL-PERCENTAGES.
    DIVIDE 1 BY NO-OF-CC GIVING COMMON-PERCENT (I) ROUNDED.
MOVE-IN-PERCENTAGES.
    DIVIDE COMMON-AMT (I) BY COMMON-AMOUNTS-ACCUM
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            GIVING COMMON-PERCENT (I) ROUNDED.
        SUBTRACT COMMON-PERCENT (I) FROM PERCENT-100.
        IF I = NO-OF-CC THEN
            ADD PERCENT-100 TO COMMON-PERCENT (I).
    WRITE-RESOLVED-COSTS.
        MOVE 1 TO I, J.
    FILL-PRINT-LINE.
        MOVE ACCT-NO TO RES-ACCT-NO.
        MULTIPLY COMMON-PERCENT (I) BY AMT-HOLD GIVING RES-AMTS (1).
        MOVE RES-AMTS (1) TO AMT-OUT OF RES-DATA (J).
        SUBTRACT RES-AMTS (1) FROM AMT-HOLD-OVFLOW.
        MOVE SLASH TO SLASH-OUT OF RES-DATA (J).
        MOVE CRF-COST-CNTR OF CC-BLK (I) TO
            COST-CNTR-OUT OF RES-DATA (J),
            RES-COST-CNTR.
        MOVE COST-CAT TO RES-COST-CAT.
        MOVE CRF-MATCH-CODE OF CC-BLK (I) TO
            RES-MATCH-CODE.
    BALANCE-LAST-AMOUNT.
        IF I = NO-OF-CC THEN
            ADD RES-AMTS (1) TO AMT-HOLD-OVFLOW
            MOVE AMT-HOLD-OVFLOW TO RES-AMTS (1)
                             AMT-OUT OF RES-DATA (J).
    WRITE-DISK-REC.
        WRITE RES-REC.
    CHECK-NO-OF-CC.
        IF I = NO-OF-CC THEN
            GO TO WRITE-PRINT-LINE.
        IF J = 6 THEN PERFORM
            WRITE-PRINT-LINE,
            MOVE 0 TO J.
        ADD 1 TO I, J.
        GO TO FILL-PRINT-LINE.
    WRITE-PRINT-LINE.
        MOVE DATA-LINE TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE SPACES TO DATA-LINE.
    SKIP-A-LINE.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
        IF LINE-CT > MAX-LINE THEN
            PERFORM WRITE-HEADINGS.
    WRITE-RESOLVED-COSTS-END.
        EXIT.
    GET-B-PERCENTAGES.
        PERFORM GET-COMMON-PERCENTAGES.
        PERFORM MOVE-COMMON-TO-B-PERCENT VARYING
            I FROM 1 BY 1 UNTIL I > NO-OF-CC.
    MOVE-COMMON-TO-B-PERCENT.
        MOVE COMMON-PERCENT (I) TO B-PERCENT (I).
    GET-C-PERCENTAGES.
    PERFORM GET-COMMON-PERCENTAGES.
    PERFORM MOVE-COMMON-TO-C-PERCENT VARYING
        I FROM 1 BY 1 UNTIL I > NO-OF-CC.
MOVE-COMMON-TO-C-PERCENT.
    MOVE COMMON-PERCENT (I) TO C-PERCENT (I).
GET-D-PERCENTAGES.
    PERFORM GET-COMMON-PERCENTAGES.
    PERFORM MOVE-COMMON-TO-D-PERCENT VARYING
        I FROM 1 BY 1 UNTIL I > NO-OF-CC.
MOVE-COMMON-TO-D-PERCENT.
    MOVE COMMON-PERCENT (I) TO D-PERCENT (I).
GET-E-PERCENTAGES.
    PERFORM GET-COMMON-PERCENTAGES.
    PERFORM MOVE-COMMON-TO-E-PERCENT VARYING
        I FROM 1 BY 1 UNTIL I > NO-OF-CC.
MOVE-COMMON-TO-E-PERCENT.
    MOVE COMMON-PERCENT (I) TO E-PERCENT (I).
GET-F-PERCENTAGES.
    PERFORM GET-COMMON-PERCENTAGES.
    PERFORM MOVE-COMMON-TO-F-PERCENT VARYING
        I FROM 1 BY 1 UNTIL I > NO-OF-CC.
MOVE-COMMON-TO-F-PERCENT.
    MOVE COMMON-PERCENT (I) TO F-PERCENT (I).
GET-G-PERCENTAGES.
    PERFORM GET-COMMON-PERCENTAGES.
    PERFORM MOVE-COMMON-TO-G-PERCENT VARYING
        I FROM 1 BY 1 UNTIL I > NO-OF-CC.
MOVE-COMMON-TO-G-PERCENT.
    MOVE COMMON-PERCENT (I) TO G-PERCENT (I).
MOVE-B-PERCENT-TO-COMMON.
    MOVE B-PERCENT (I) TO COMMON-PERCENT (I).
MOVE-C-PERCENT-TO-COMMON.
    MOVE C-PERCENT (I) TO COMMON-PERCENT (I).
MOVE-D-PERCENT-TO-COMMON.
    MOVE D-PERCENT (I) TO COMMON-PERCENT (I).
MOVE-E-PERCENT-TO-COMMON.
    MOVE E-PERCENT (I) TO COMMON-PERCENT (I).
MOVE-F-PERCENT-TO-COMMON.
    MOVE F-PERCENT (I) TO COMMON-PERCENT (I).
MOVE-G-PERCENT-TO-COMMON.
    MOVE G-PERCENT (I) TO COMMON-PERCENT (I).
WRITE-SUBTOTAL.
    MOVE SPACES TO DATA-LINE.
    PERFORM MOVE-SPACES.
    PERFORM PRINT-LINE-OUT 2 TIMES.
    MOVE 'SUBTOTAL  ' TO ACCT-NO-OUT.
    MOVE SUBTOTAL TO AMOUNT-OUT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
CLOSE-IO-FILES.
```

```
           CLOSE   COST-ALLOCATION-RESOLVED,
                   COST-ALLOCATION-UNRESOLVED,
                   COST-ALLOCATION-RESOLVED-COSTS,
                   CROSS-REF-FILE,
                   CARD-IN,
                   PRINT-OUT.
       E-O-J.
           STOP RUN.
```

```
        PGMNAME=WUASUZFI
.SYSIN     DD  *
  ID DIVISION.
  PROGRAM-ID. WUASUZFI.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN. DEC 1977.
  DATE-COMPILED.
  REMARKS.     THIS PROGRAM ZEROS OUT THE AMOUNT
               FIELDS IN THE COST-MATRIX FILE
               DEPENDING ON THE PARAMETER CARD(S).
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-MATRIX-FILE
          ASSIGN TO DA-3330-I-CMFILE
          ACCESS MODE IS SEQUENTIAL
          RECORD KEY IS CM-NUMBER.
  DATA DIVISION.
  FILE SECTION.
  FD  COST-MATRIX-FILE
      RECORD CONTAINS 80 CHARACTERS
      BLOCK CONTAINS 5 RECORDS
      LABEL RECORDS ARE STANDARD
      DATA RECORD IS INPUT-REC.
 01   INPUT-REC.
      05  MATCH-CODE         PIC X(4).
      05  CM-NUMBER          PIC X(16).
      05  AMOUNTS.
          10  AMTS OCCURS 6 TIMES PIC S9(8)V99.
*****
*       THE ABOVE AMTS (AMOUNTS) ARE AS FOLLOWS
*         (1) -- CURRENT COST AMOUNT
*         (2) -- PREVIOUS MONTH COST AMOUNT
*         (3) -- CURRENT COST AMOUNT YEAR TO DATE (YTD)
*         (4) -- BUDGET AMOUNT
*         (5) -- BUDGET AMOUNT YEAR TO DATE (YTD)
*        (6) -- PREVIOUS YEAR COST AMOUNT (PYC)
*****
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     05  PARM-CODE        PIC X.
     05  FILLER           PIC X(79).
 FD  PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
 01  PRINT-LINE.
     05  FILLER           PIC X.
     05  PRINT-DATA       PIC X(80).
     05  FILLER           PIC X(52).
 PROCEDURE DIVISION.
 OPEN-FILES.
     OPEN    I-O     COST-MATRIX-FILE,
             INPUT   CARD-IN,
             OUTPUT  PRINT-OUT.
 TOP-OF-NEWPAGE.
     PERFORM MOVE-SPACES.
     WRITE PRINT-LINE BEFORE NEW-PAGE.
     PERFORM PRINT-LINE-OUT 10 TIMES.
     MOVE 'THE COST MATRIX FILE IS BEING  CHANGED   BY THE FOLLOWI
-         'NG METHOD' TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
 READ-CARD-IN.
     READ CARD-IN AT END GO TO STANDARD-ZERO-PROCEDURE.
     IF PARM-CODE = 'F' THEN
         GO TO FISCAL-YEAR-CHANGE-PROCEDURE.
     IF PARM-CODE = 'Z' THEN
         GO TO ZERO-OUT-FILE-PROCEDURE.
 INVALID-PARM-CODE-FALLTHRU.
     MOVE '    THE FOLLOWING PARAMETER CARD WAS INVALID -- JOB ABO
-         'RTED' TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     MOVE INPUT-CARD TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
     GO TO CLOSE-FILES.
 STANDARD-ZERO-PROCEDURE.
     MOVE '    NORMAL PERIOD CHANGE OVER' TO PRINT-DATA.
     PERFORM PRINT-LINE-OUT.
 START-ZERO-1.
     PERFORM READ-CM-FILE.
     MOVE AMTS (1) TO AMTS (2).
     MOVE ZEROS TO AMTS (1).
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          PERFORM REWRITE-CM-FILE.
          GO TO START-ZERO-1.
      FISCAL-YEAR-CHANGE-PROCEDURE.
          MOVE '     FISCAL YEAR CHANGE OVER '  TO PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
      START-ZERO-2.
          PERFORM READ-CM-FILE.
          MOVE AMTS (1) TO AMTS (2).
          MOVE AMTS (3) TO AMTS (6).
          MOVE ZEROS TO AMTS (1), AMTS (3), AMTS (4), AMTS (5).
          PERFORM REWRITE-CM-FILE.
          GO TO START-ZERO-2.
      ZERO-OUT-FILE-PROCEDURE.
          MOVE '     COST MATRIX FILE IS BEING ZEROED OUT' TO
              PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
      START-ZERO-3.
          PERFORM READ-CM-FILE.
          MOVE ZEROS TO AMOUNTS.
          PERFORM REWRITE-CM-FILE.
          GO TO START-ZERO-3.
      READ-CM-FILE.
          READ COST-MATRIX-FILE AT END
          MOVE  'REVISION OF CM FILE COMPLETED' TO PRINT-DATA
              PERFORM PRINT-LINE-OUT
              GO TO CLOSE-FILES.
      REWRITE-CM-FILE.
          REWRITE INPUT-REC.
      MOVE-SPACES.
          MOVE SPACES TO PRINT-LINE.
      PRINT-LINE-OUT.
          WRITE PRINT-LINE BEFORE 1.
      CLOSE-FILES.
          CLOSE   COST-MATRIX-FILE,
                  CARD-IN,
                  PRINT-OUT.
      E-O-J.
          STOP RUN.
      PGMNAME=WUASCUPD
.SYSIN    DD  *
  ID DIVISION.
  PROGRAM-ID. WUASCUPD.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN.  DEC 1977.
  DATE-COMPILED.
  REMARKS.    THIS PROGRAM READS THE COST ALLOCATION RESOLVED
              FILE (RESOCAFI) AND UPDATES THE COST MATRIX FILE
              (CMFILE) WITH THE CURRENT COSTS.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT COST-ALLOCATION-RESOLVED
          ASSIGN TO UT-3330-S-RESOCAFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-MATRIX-FILE
          ASSIGN TO DA-3330-I-CMFILE
          ACCESS MODE IS RANDOM
          RECORD KEY IS CM-NUMBER
          NOMINAL KEY IS CM-NOMINAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT FILE-SORT
          ASSIGN TO UT-3330-S-FILESORT
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  COST-MATRIX-FILE
      BLOCK CONTAINS 5 RECORDS
      RECORD CONTAINS 80 CHARACTERS
      LABEL RECORDS ARE STANDARD
      DATA RECORD IS CM-REC.
  01  CM-REC.
      05  MATCH-CODE       PIC X(4).
      05  CM-NUMBER.
          10  ACCT-NO      PIC X(10).
          10  COST-CNTR    PIC X(4).
          10  COST-CAT     PIC X(2).
      05  AMOUNTS.
          10  AMT OCCURS 6 TIMES PIC S9(8)V99.
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FD  COST-ALLOCATION-RESOLVED
    BLOCK CONTAINS 5 RECORDS
    RECORD CONTAINS 80 CHARACTERS
    LABEL RECORDS ARE STANDARD
    DATA RECORD IS RES-REC.
01  RES-REC.
    05  RES-NUM             PIC X(16).
    05  RES-MATCH-CODE      PIC X(4).
    05  RES-AMOUNTS.
        10  RES-AMT OCCURS 6 TIMES PIC S9(8)V99.
SD  FILE-SORT
    RECORD CONTAINS 80 CHARACTERS
    DATA RECORD IS SORT-INPUT.
01  SORT-INPUT.
    05  SORT-FIELD          PIC X(16).
    05  FILLER              PIC X(64).
FD  PRINT-OUT
    RECORD CONTAINS 133 CHARACTERS
    LABEL RECORDS ARE OMITTED
    DATA RECORD IS PRINT-LINE.
01  PRINT-LINE.
    05  FILLER              PIC X.
    05  PRINT-DATA          PIC X(132).
WORKING-STORAGE SECTION.
77  CM-NOMINAL              PIC X(16) VALUE SPACES.
77  READ-COUNT              PIC 9(7)  VALUE ZERO.
77  UPDATE-COUNT            PIC 9(7) VALUE ZERO.
77  GOOD-COUNT              PIC 9(7) VALUE ZERO.
77  BAD-COUNT               PIC 9(7) VALUE ZERO.
01  AMOUNT-HOLD.
    05  AMT-HOLD OCCURS 6 TIMES PIC S9(8)V99.
01  DATA-LINE.
    05  FILLER              PIC X(10) VALUE SPACES.
    05  COMMENT             PIC X(18) VALUE SPACES.
    05  FILLER              PIC XX    VALUE SPACES.
    05  COUNT-OUT           PIC Z(7).
    05  ERROR-REC           PIC X(80).
    05  FILLER              PIC X(15).
PROCEDURE DIVISION.
SORT-RECORDS.
    SORT FILE-SORT ON ASCENDING KEY
         SORT-FIELD
    USING  COST-ALLOCATION-RESOLVED
    GIVING COST-ALLOCATION-RESOLVED.
OPEN-FILES.
    OPEN I-O    COST-MATRIX-FILE.
         INPUT  COST-ALLOCATION-RESOLVED.
         OUTPUT PRINT-OUT.
HOUSE-KEEP.
    MOVE SPACES TO DATA-LINE.
```

```
           MOVE ZEROS  TO AMOUNT-HOLD.
       TOP-NEW-PAGE.
           PERFORM MOVE-SPACES.
           WRITE PRINT-LINE BEFORE NEW-PAGE.
           MOVE 'UPDATE CM FILE PGM' TO COMMENT.
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES.
           PERFORM PRINT-LINE-OUT 3 TIMES.
       READ-RES-REC.
           READ COST-ALLOCATION-RESOLVED AT END
               GO TO WRITE-COUNTS.
           ADD 1 TO READ-COUNT.
       MOVE-NOMINAL-KEY.
           MOVE RES-NUM TO CM-NOMINAL.
           READ COST-MATRIX-FILE INVALID KEY
               MOVE 'INVALID RECORD KEY' TO COMMENT
               MOVE RES-REC TO ERROR-REC
               MOVE DATA-LINE TO PRINT-DATA
               PERFORM PRINT-LINE-OUT
               PERFORM MOVE-SPACES THRU PRINT-LINE-OUT
               MOVE SPACES TO DATA-LINE
               ADD 1 TO BAD-COUNT
               GO TO READ-RES-REC.
           MOVE AMOUNTS TO AMOUNT-HOLD.
           MOVE ZEROS TO AMT-HOLD (1).
       START-UPDATE.
           ADD RES-AMT (1) TO AMT-HOLD (1) AMT-HOLD (3).
           ADD 1 TO GOOD-COUNT.
       CHECK-NEXT-REC.
           PERFORM READ-RES-REC.
           IF RES-NUM = TO CM-NOMINAL THEN
               GO TO START-UPDATE.
       REWRITE-CM-REC.
           MOVE AMOUNT-HOLD TO AMOUNTS.
           REWRITE CM-REC.
           ADD 1 TO UPDATE-COUNT.
           MOVE SPACES TO CM-NUMBER.
       GO-TO-MOVE-NOMINAL-KEY.
           GO TO MOVE-NOMINAL-KEY.
       MOVE-SPACES.
           MOVE SPACES TO PRINT-LINE.
       PRINT-LINE-OUT.
           WRITE PRINT-LINE BEFORE 1.
       WRITE-COUNTS.
           IF CM-NUMBER NOT = SPACES THEN
               PERFORM REWRITE-CM-REC.
           PERFORM MOVE-SPACES.
           PERFORM PRINT-LINE-OUT 3 TIMES.
           MOVE 'INPUT RECORD COUNT' TO COMMENT.
           MOVE READ-COUNT TO COUNT-OUT.
           PERFORM PRINT-LINE-OUT.
           MOVE 'ERROR RECORD COUNT' TO COMMENT.
           MOVE BAD-COUNT TO COUNT-OUT.
           PERFORM PRINT-LINE-OUT.
           MOVE 'GOOD  RECORD COUNT' TO COMMENT.
           MOVE GOOD-COUNT TO COUNT-OUT.
           PERFORM PRINT-LINE-OUT.
           MOVE 'UPDATED REC  COUNT' TO COMMENT.
           MOVE UPDATE-COUNT TO COUNT-OUT.
           PERFORM PRINT-LINE-OUT.
       CLOSE-FILES.
           CLOSE   COST-MATRIX-FILE,
                   COST-ALLOCATION-RESOLVED
                   PRINT-OUT.
       E-O-J.
           STOP RUN.
```

```
 PGMNAME=WUASLV44
.SYSIN    DD  *
 ID DIVISION.
 PROGRAM-ID. WUASLV44.
 AUTHOR. ACT SYSTEMS INC
           SUITE 200
           807 W MORSE BLVD
           WINTER PARK, FLA 32789.
 DATE-WRITTEN. JAN 1978.
 DATE-COMPILED.
 REMARKS.     THIS PROGRAM SORTS THE COST MATRIX FILE BY
              MATCH CODE AND PRINTS OUT LEVEL IV
              (SUPPORT SERVICES) REPORT.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 SOURCE-COMPUTER. IBM-370.
 OBJECT-COMPUTER. IBM-370.
 SPECIAL-NAMES.
     C01 IS NEW-PAGE.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
     SELECT CARD-IN
         ASSIGN TO UR-2540R-S-CARDIN
         ACCESS MODE IS SEQUENTIAL.
     SELECT PRINT-OUT
         ASSIGN TO UR-1403-S-PRINTOUT
         ACCESS MODE IS SEQUENTIAL.
     SELECT COST-MATRIX-FILE
         ASSIGN TO DA-3330-I-CMFILE
         ACCESS MODE IS SEQUENTIAL
         RECORD KEY IS CM-NUMBER.
     SELECT FINANCIAL-ACCT-TABFI
         ASSIGN TO DA-3330-I-FATABFI
         ACCESS MODE IS RANDOM
         NOMINAL KEY IS FA-NOMINAL
         RECORD KEY IS FA-NUMBER.
     SELECT FILE-SORT
         ASSIGN TO UT-3330-S-FILESORT
         ACCESS MODE IS SEQUENTIAL.
     SELECT SORTED-FILE
         ASSIGN TO UT-3330-S-SORTEDFI
         ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
 FILE SECTION.
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     05  DATE-IN             PIC X(18).
```

```
           05  TITLE-IN          PIC X(24).
           05  FILLER            PIC X(38).
       FD  PRINT-OUT
           RECORD CONTAINS 133 CHARACTERS
           LABEL RECORDS ARE OMITTED
           DATA RECORD IS PRINT-LINE.
       01  PRINT-LINE.
           05  FILLER            PIC X.
           05  PRINT-DATA        PIC X(132).
       FD  COST-MATRIX-FILE
           RECORD CONTAINS 80 CHARACTERS
           BLOCK CONTAINS 5 RECORDS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS CM-REC.
       01  CM-REC.
           05  MATCH-CODE-POS1   PIC X.
           05  FILLER            PIC X(3).
           05  CM-NUMBER         PIC X(10).
           05  FILLER            PIC X(66).
       FD  FINANCIAL-ACCT-TABFI
           BLOCK CONTAINS 8 RECORDS
           RECORD CONTAINS 58 CHARACTERS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS FA-REC.
       01  FA-REC.
           05  FA-NUMBER         PIC X(10).
           05  FA-NAME           PIC X(20) OCCURS 2 TIMES.
           05  FILLER            PIC X(8).
       SD  FILE-SORT
           RECORD CONTAINS 80 CHARACTERS
           DATA RECORD IS SORT-INPUT.
       01  SORT-INPUT.
           05  S-MATCH-CODE      PIC X(4).
           05  FILLER            PIC X(16).
           05  FILLER            PIC X(60).
       FD  SORTED-FILE
           RECORD CONTAINS 80 CHARACTERS
           BLOCK CONTAINS 5 RECORDS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS INPUT-REC.
       01  INPUT-REC.
           05  MATCH-CODE        PIC X(4).
           05  ACCT-NO           PIC X(10).
           05  COST-CNTR.
               10  FILLER        PIC X.
               10  CC-POS2       PIC 9.
               10  FILLER        PIC X.
               10  CC-POS4       PIC 9.
           05  COST-CAT          PIC XX.
           05  AMTS              PIC S9(8)V99 OCCURS 6 TIMES.
```

```
*****
*      THE ABOVE AMTS ARE AS FOLLOWS
*         (1) -- CURRENT COST AMOUNT
*         (2) -- PREVIOUS MONTH COST AMOUNT
*         (3) -- CURRENT COST AMOUNT YEAR TO DATE (YTD)
*         (4) -- BUDGET AMOUNT
*         (5) -- BUDGET AMOUNT YEAR TO DATE
*         (6) -- PREVIOUS YEAR COST AMOUNT (PYC)
*****
 WORKING-STORAGE SECTION.
 77  PAGE-CT                 PIC 9(4)  VALUE ZERO.
 77  LINE-CT                 PIC 9(2)  VALUE ZERO.
 77  FA-NOMINAL              PIC X(10) VALUE SPACES.
 77  I                       PIC 9.
 77  MATCH-HOLD              PIC X(4)  VALUE SPACES.
 77  MATCH-POS1              PIC X     VALUE '4'.
 77  MAX-LINE                PIC 9(2)  COMP VALUE 56.
 77  SUBTOTAL-FLAG           PIC X VALUE '0'.
 01  HEAD-1.
     05  FILLER              PIC X(57) VALUE SPACES.
     05  FILLER              PIC X(18) VALUE 'LEVEL IV REPORT OF'.
     05  FILLER              PIC X(57) VALUE SPACES.
 01  HEAD-2.
     05  FILLER              PIC X(6)  VALUE 'DATE: '.
     05  DATE-OUT            PIC X(18) VALUE SPACES.
     05  FILLER              PIC X(30) VALUE SPACES.
     05  FILLER              PIC X(26) VALUE 'SUPPORT SERVICES COSTS
-                                      'FOR'.
     05  FILLER              PIC X(42) VALUE SPACES.
     05  FILLER              PIC X(6)  VALUE 'PAGE: '.
     05  PAGE-OUT            PIC Z(4).
 01  HEAD-3.
     05  FILLER              PIC X(55) VALUE SPACES.
     05  TITLE-OUT           PIC X(24) VALUE SPACES.
     05  FILLER              PIC X(53) VALUE SPACES.
 01  HEAD-4.
     05  FILLER              PIC X(26) VALUE 'COST CATEGORY DESCRIPTI
-                                      'ONS'.
     05  FILLER              PIC X(2)  VALUE SPACES.
     05  FILLER              PIC X(102) VALUE '**********************
-                            '***********  S U P P O R T    S E R V I
-                            ' C E S  *******************************
-                            '**'.
     05  FILLER              PIC X(2)  VALUE SPACES.
 01  HEAD-5.
     05  FILLER              PIC X(31) VALUE SPACES.
     05  FILLER              PIC X(8)  VALUE 'CUSTOMER'.
     05  FILLER              PIC X(13) VALUE SPACES.
     05  FILLER              PIC X(9)  VALUE 'GENERAL &'.
     05  FILLER              PIC X(12) VALUE SPACES.
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    05  FILLER               PIC X(34) VALUE 'MAINTANCE OF OUTSIDE SE
-                            'RVICE AREAS'.
    05  FILLER               PIC X(12) VALUE SPACES.
    05  FILLER               PIC X(7)  VALUE 'COST OF'.
    05  FILLER               PIC X(6)  VALUE SPACES.
01  HEAD-6.
    05  FILLER               PIC X(30) VALUE SPACES.
    05  FILLER               PIC X(10) VALUE 'ACCOUNTING'.
    05  FILLER               PIC X(9)  VALUE SPACES.
    05  FILLER               PIC X(14) VALUE 'ADMINISTRATIVE'.
    05  FILLER               PIC X(10) VALUE SPACES.
    05  FILLER               PIC X(11) VALUE 'TAYLOR MILL'.
    05  FILLER               PIC X(11) VALUE SPACES.
    05  FILLER               PIC X(12) VALUE 'INDEPENDENCE'.
    05  FILLER               PIC X(9)  VALUE SPACES.
    05  FILLER               PIC X(14) VALUE 'MATERIALS SOLD'.
    05  FILLER               PIC X(2)  VALUE SPACES.
01  DATA-LINE.
    05  FILLER               PIC X(2)  VALUE SPACES.
    05  DESC                 PIC X(20).
    05  AMOUNTS OCCURS 5 TIMES.
        10  FILLER           PIC X(6).
        10  AMT              PIC -(8).--.
        10  FILLER           PIC X(5).
01  ACCUMS.
    05  ACCUM                PIC S9(8)V99 OCCURS 5 TIMES.
01  SUBTOTALS.
    05  SUBS                 PIC S9(8)V99 OCCURS 5 TIMES.
PROCEDURE DIVISION.
OPEN-FILES.
    OPEN INPUT  CARD-IN,
         INPUT  CARD-IN,
                COST-MATRIX-FILE,
                FINANCIAL-ACCT-TABLE,
        OUTPUT PRINT-OUT.
READ-CARD-IN.
    READ CARD-IN AT END
        MOVE '*** NO DATE/TITLE CARD  ** JOB ABORTED ***' TO
        PRINT-DATA,
        PERFORM PRINT-LINE-OUT,
        GO TO CLOSE-FILES.
    MOVE DATE-IN TO DATE-OUT.
    MOVE TITLE-IN TO TITLE-OUT.
SORT-CM-FILE.
    OPEN OUTPUT SORTED-FILE.
    SORT FILE-SORT ON ASCENDING KEY
        S-MATCH-CODE
    INPUT PROCEDURE
        READ-SORT-INPUT THRU READ-SORT-INPUT-END
    OUTPUT PROCEDURE
```

```
            WRITE-SORT-OUTPUT THRU WRITE-SORT-OUTPUT-END.
        CLOSE SORTED-FILE.
        OPEN INPUT SORTED-FILE.
    WRITE-HEADINGS.
        MOVE ZERO TO LINE-CT.
        ADD 1 TO PAGE-CT.
        MOVE PAGE-CT TO PAGE-OUT.
        PERFORM MOVE-SPACES.
        WRITE PRINT-LINE BEFORE NEW-PAGE.
        MOVE HEAD-1 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE HEAD-2 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE HEAD-3 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
        MOVE HEAD-4 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE HEAD-5 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE HEAD-6 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    ZERO-ACCUMS.
        MOVE ZEROS TO SUBTOTALS.
    HOUSE-KEEP.
        MOVE SPACES TO DATA-LINE.
        MOVE ZEROS TO ACCUMS.
    READ-SORTED-FILE.
        READ SORTED-FILE AT END PERFORM WRITE-LINE-OUT.
        GO TO WRITE-TOTALS.
    NEW-MATCH-CODE.
        MOVE MATCH-CODE TO MATCH-HOLD.
        IF (MATCH-CODE = '4815') AND (SUBTOTAL-FLAG = '0') THEN
            PERFORM WRITE-SUB-TOTAL
            MOVE '1' TO SUBTOTAL-FLAG
            GO TO READ-SORTED-FILE.
        MOVE ACCT-NO TO FA-NOMINAL.
        READ FINANCIAL-ACCT-TABFI INVALID KEY
            MOVE SPACES TO FA-NAME (1), FA-NAME (2).
    TOTAL-COST-CNTRS.
        IF CC-POS2 < 3 THEN
            ADD AMTS (1) TO ACCUM (CC-POS2), SUBS (CC-POS2)
            GO TO READ-NEXT-REC.
        IF CC-POS2 = 4 THEN
            MOVE 5 TO CC-POS2
            ADD AMTS (1) TO ACCUM (CC-POS2). SUBS (CC-POS2)
            GO TO READ-NEXT-REC.
        IF CC-POS4 = 2 THEN
            MOVE 4 TO CC-POS2
            ADD AMTS (1) TO ACCUM (CC-POS2), SUBS (CC-POS2)
        ELSE ADD AMTS (1) TO ACCUM (CC-POS2), SUBS (CC-POS2).
    READ-NEXT-REC.
        PERFORM READ-SORTED-FILE.
        IF MATCH-CODE EQUAL TO MATCH-HOLD THEN
            GO TO TOTAL-COST-CNTRS.
    WRITE-LINE-OUT.
        MOVE FA-NAME (1) TO DESC.
        PERFORM MOVE-ACCUMS VARYING I FROM 1 BY 1 UNTIL I = 6.
        MOVE DATA-LINE TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        IF FA-NAME (2) NOT EQUAL TO SPACES THEN
            MOVE SPACES TO DATA-LINE.
            MOVE FA-NAME (2) TO DESC.
            MOVE DATA-LINE TO PRINT-DATA.
            PERFORM PRINT-LINE-OUT.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
        PERFORM HOUSE-KEEP.
    CHECK-FOR-NEW-HEADING.
        IF LINE-CT NOT < MAX-LINE THEN
            PERFORM WRITE-HEADINGS.
        GO TO NEW-MATCH-CODE.
    WRITE-TOTALS.
        PERFORM MOVE-SPACES.
        PERFORM PRINT-LINE-OUT 2 TIMES.
        PERFORM HOUSE-KEEP.
        MOVE 'TOTALS' TO DESC.
        PERFORM MOVE-AMOUNTS VARYING I FROM 1 BY 1 UNTIL I = 6.
        MOVE DATA-LINE TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        GO TO CLOSE-FILES.
    WRITE-SUB-TOTAL.
        PERFORM MOVE-AMOUNTS VARYING I FROM 3 BY 1 UNTIL I = 6.
        MOVE 'EXPENCES COVERED BY' TO DESC.
        MOVE DATA-LINE TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE SPACES TO DATA-LINE.
        MOVE 'OTHER REVENUE' TO DESC.
        MOVE DATA-LINE TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    MOVE-SPACES.
        MOVE SPACES TO PRINT-LINE.
    PRINT-LINE-OUT.
        WRITE PRINT-LINE BEFORE 1.
        ADD 1 TO LINE-CT.
    MOVE-ACCUMS.
        MOVE ACCUM (I) TO AMT OF AMOUNTS (I).
    MOVE-AMOUNTS.
        MOVE SUBS (I) TO AMT OF AMOUNTS (I).
    MOVE ZERO TO SUBS (I).
READ-SORT-INPUT.
    READ COST-MATRIX-FILE AT END
        GO TO READ-SORT-INPUT-END.
    IF MATCH-CODE-POS1 NOT = TO MATCH-POS1
        THEN GO TU READ-SORT-INPUT.
    RELEASE SORT-INPUT FROM CM-REC.
    GO TO READ-SORT-INPUT.
READ-SORT-INPUT-END.
    EXIT.
WRITE-SORT-OUTPUT.
    RETURN FILE-SORT RECORD INTO INPUT-REC
        AT END GO TO WRITE-SORT-OUTPUT-END.
    WRITE INPUT-REC.
    GO TO WRITE-SORT-OUTPUT.
WRITE-SORT-OUTPUT-END.
    EXIT.
CLOSE-FILES.
    CLOSE   SORTED-FILE,
            CARD-IN,
            COST-MATRIX-FILE,
            FINANCIAL-ACCT-TABFI,
            PRINT-OUT.
E-O-J.
    STOP RUN.
```

```
  PGMNAME=PLV43COV
.SYSIN    DD  *
  ID DIVISION.
  PROGRAM-ID. PLV43COV.
  AUTHOR. ACT SYSTEMS INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FLA 32789.
  DATE-WRITTEN. JAN 1978.
  DATE-COMPILED.
  REMARKS.      THIS PROGRAM SORTS THE COST MATRIX FILE BY
                MATCH CODE AND PRINTS OUT LEVEL IV (DELIVERY)
                REPORT.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-MATRIX-FILE
          ASSIGN TO DA-3330-I-CMFILE
          ACCESS MODE IS SEQUENTIAL
          RECORD KEY IS CM-NUMBER.
      SELECT PRINT-FILE
          ASSIGN TO UT-3330-S-PRINTFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT FINANCIAL-ACCT-TABFI
          ASSIGN TO DA-3330-I-FATABFI
          ACCESS MODE IS RANDOM
          NOMINAL KEY IS FA-NOMINAL
          RECORD KEY IS FA-NUMBER.
      SELECT FILE-SORT
          ASSIGN TO UT-3330-S-FILESORT
          ACCESS MODE IS SEQUENTIAL.
      SELECT SORTED-FILE
          ASSIGN TO UT-3330-S-SORTEDFI
          ACCESS MODE IS SEQUENTIAL.
DATA DIVISION.
FILE SECTION.
FD  CARD-IN
    RECORD CONTAINS 80 CHARACTERS
    LABEL RECORDS ARE OMITTED
```

```
     DATA RECORD IS INPUT-CARD.
01   INPUT-CARD.
     05  DATE-IN              PIC X(18).
     05  TITLE-IN             PIC X(24).
     05  FILLER               PIC X(38).
FD   PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
01   PRINT-LINE.
     05  FILLER               PIC X.
     05  PRINT-DATA           PIC X(132).
FD   COST-MATRIX-FILE
     RECORD CONTAINS 80 CHARACTERS
     BLOCK CONTAINS 5 RECORDS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS CM-REC.
01   CM-REC.
     05  MATCH-CODE-POS1      PIC X.
     05  FILLER               PIC X(3).
     05  CM-NUMBER            PIC X(10).
     05  FILLER               PIC X(66).
FD   PRINT-FILE
     BLOCK CONTAINS 6 RECORDS
     RECORD CONTAINS 240 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS PRINT-LINE-HOLD.
01   PRINT-LINE-HOLD.
     05  DESC-HOLD            PIC X(20) OCCURS 2 TIMES.
     05  AMTS-HOLD            PIC S9(8)V99 OCCURS 20 TIMES.
FD   FINANCIAL-ACCT-TABFI
     BLOCK CONTAINS 8 RECORDS
     RECORD CONTAINS 58 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS FA-REC.
01   FA-REC.
     05  FA-NUMBER            PIC X(10).
     05  FA-NAME              PIC X(20) OCCURS 2 TIMES.
     05  FILLER               PIC X(8).
SD   FILE-SORT
     RECORD CONTAINS 80 CHARACTERS
     DATA RECORD IS SORT-INPUT.
01   SORT-INPUT.
     05  S-MATCH-CODE         PIC X(4).
     05  FILLER               PIC X(16).
     05  FILLER               PIC X(60).
FD   SORTED-FILE
     RECORD CONTAINS 80 CHARACTERS
     BLOCK CONTAINS 5 RECORDS
     LABEL RECORDS ARE STANDARD
```

```
          DATA RECORD IS INPUT-REC.
      01  INPUT-REC.
          05  MATCH-CODE          PIC X(4).
          05  ACCT-NO             PIC X(10).
          05  COST-CNTR.
              10  FILLER          PIC X.
              10  CC-POS2         PIC 9.
              10  FILLER          PIC X.
              10  CC-POS4         PIC 9.
          05  COST-CAT            PIC XX.
          05  AMTS                PIC S9(8)V99 OCCURS 6 TIMES.
*****
*        THE ABOVE AMTS ARE AS FOLLOWS
*            (1) -- CURRENT COST AMOUNT
*            (2) -- PREVIOUS MONTH COST AMOUNT
*            (3) -- CURRENT COST AMOUNT YEAR TO DATE (YTD)
*            (4) -- BUDGET AMOUNT
*            (5) -- BUDGET AMOUNT YEAR TO DATE
*            (6) -- PREVIOUS YEAR COST AMOUNT (PYC)
*****
       WORKING-STORAGE SECTION.
       77  PAGE-CT                PIC 9(4)  VALUE ZERO.
       77  LINE-CT                PIC 9(2)  VALUE ZERO.
       77  FA-NOMINAL             PIC X(10) VALUE SPACES.
       77  I                      PIC 9.
       77  J                      PIC S99.
       77  K                      PIC 99.
       77  L                      PIC 99.
       77  M                      PIC 99.
       77  N                      PIC 99.
       77  O                      PIC 99.
       77  MATCH-HOLD             PIC X(4)  VALUE SPACES.
       77  MATCH-POS1             PIC X     VALUE '3'.
       77  MAX-LINE               PIC 9(2)  COMP VALUE 56.
       77  MINUS-ONE              PIC S9(8)V99 VALUE -0.01.
       01  HEAD-1.
           05  FILLER             PIC X(57) VALUE SPACES.
           05  FILLER             PIC X(18) VALUE 'LEVEL IV REPORT OF'.
           05  FILLER             PIC X(57) VALUE SPACES.
       01  HEAD-2.
           05  FILLER             PIC X(6)  VALUE 'DATE: '.
           05  DATE-OUT           PIC X(18) VALUE SPACES.
           05  FILLER             PIC X(32) VALUE SPACES.
           05  FILLER             PIC X(21) VALUE ' DELIVERY COSTS FOR  '.
           05  FILLER             PIC X(41) VALUE SPACES.
           05  FILLER             PIC X(6)  VALUE 'PAGE: '.
           05  PAGE-OUT           PIC Z(4).
           05  FILLER             PIC X(3)  VALUE ' - '.
           05  PAGE-LETTER-OUT    PIC X.
       01  HEAD-3.
```

```
     05  FILLER           PIC X(55) VALUE SPACES.
     05  TITLE-OUT        PIC X(24) VALUE SPACES.
     05  FILLER           PIC X(53) VALUE SPACES.
 C1  HEAD-4.
     05  FILLER           PIC X(49) VALUE SPACES.
     05  FILLER           PIC X(79) VALUE '***********************
-                         '***      D E L I V E R Y      *********
-                         '*****************'.
     05  FILLER           PIC X(4)  VALUE SPACES.
 01  HEAD-5.
     05  FILLER           PIC X(49) VALUE SPACES.
     05  HEAD-OUT         PIC X(79).
     05  FILLER           PIC X(4)  VALUE SPACES.
 01  DATA-LINE.
     05  FILLER           PIC X(4)  VALUE SPACES.
     05  DESC             PIC X(20).
     05  FILLER           PIC X(19) VALUE SPACES.
     05  AMOUNTS OCCURS 5 TIMES.
         10  FILLER       PIC X(6).
         10  AMT          PIC -(8).--.
     05  FILLER           PIC X(4).
 01  ACCUMS.
         05  ACCUM-A OCCURS 4 TIMES.
             10  ACCUM-B OCCURS 5 TIMES.
                 15  ACCUM PIC S9(8)V99.
 01  SUBTOTAL.
     05  SUB-A OCCURS 4 TIMES.
         10  SUB-B OCCURS 5 TIMES.
             15  SUBS     PIC S9(8)V99.
 01  HEAD-DATA-HOLD.
     05  HEAD-DATA-A.
         10  FILLER       PIC X(79) VALUE '-----------------------
-                         '---       TRANSMISSION        ---------
-                         '-----------------'.
         10  FILLER       PIC X(79) VALUE '    ZONE 5           ZO
-                         'NE 6           ZONE 7           ZONE 8
-                         '          ZONE 9 '.
         10  FILLER       PIC X(79) VALUE '-----------------------
-                         '---       DISTRIBUTION        ---------
-                         '-----------------'.
         10  FILLER       PIC X(79) VALUE '    ZONE 5           ZO
-                         'NE 6           ZONE 7           ZONE 8
-                         '          ZONE 9 '.
         10  FILLER       PIC X(79) VALUE '-----------------------
-                         '---          STORAGE          ---------
-                         '-----------------'.
         10  FILLER       PIC X(79) VALUE '    BROMLEY        IDA
-                         'SPENCE       DEVOG PARK
-                         '                 '.
         10  FILLER       PIC X(79) VALUE '-----------------------
```

```
-
-                                 '---        PUMP STATIONS        ---------
                                  '-------------------'.
             10  FILLER           PIC X(79) VALUE '   COLD SPRINGS     IDA
-                                 'SPENCE        DEVOG PARK          BOONE CN
-                                 'TY                  '.
         05  HEAD-DATA-B REDEFINES HEAD-DATA-A.
             10  HEAD-DATA        PIC X(79) OCCURS 8 TIMES.
      01  PAGE-LETTER-HOLD.
         05  PG-LTR-A             PIC X(4)  VALUE 'ABCD'.
         05  PG-LTR-B REDEFINES PG-LTR-A.
             10  PAGE-LETTER  PIC X  OCCURS 4 TIMES.
     PROCEDURE DIVISION.
     OPEN-FILES.
         OPEN INPUT  CARD-IN,
                     COST-MATRIX-FILE.
                     FINANCIAL-ACCT-TABFI,
              OUTPUT PRINT-OUT,
                     PRINT-FILE.
     READ-CARD-IN.
         READ CARD-IN AT END
              MOVE '*** NO DATE/TITLE CARD  ** JOB ABORTED ***' TO
              PRINT-DATA,
              PERFORM PRINT-LINE-OUT,
              GO TO CLOSE-FILES.
         MOVE DATE-IN TO DATE-OUT.
         MOVE TITLE-IN TO TITLE-OUT.
     SORT-CM-FILE.
         OPEN OUTPUT SORTED-FILE.
         SORT FILE-SORT ON ASCENDING KEY
              S-MATCH-CODE
         INPUT PROCEDURE
              READ-SORT-INPUT THRU READ-SORT-INPUT-END
         OUTPUT PROCEDURE
              WRITE-SORT-OUTPUT THRU WRITE-SORT-OUTPUT-END.
         CLOSE SORTED-FILE.
         OPEN INPUT SORTED-FILE.
     ZERO-ACCUMS.
         MOVE ZEROS TO SUBTOTAL.
             MOVE MINUS-ONE TO SUBS  (3, 4) SUBS  (3, 5) SUBS  (4, 1).
     HOUSE-KEEP.
         MOVE SPACES TO PRINT-LINE-HOLD.
         MOVE ZEROS TO ACCUMS.
             MOVE MINUS-ONE TO ACCUM (3, 4) ACCUM (3, 5) ACCUM (4, 1).
     READ-SORTED-FILE.
         READ SORTED-FILE AT END PERFORM WRITE-PRINT-FILE,
         GO TO WRITE-SUBTOTALS.
     NEW-MATCH-CODE.
         MOVE MATCH-CODE TO MATCH-HOLD.
         MOVE ACCT-NO TO FA-NOMINAL.
         READ FINANCIAL-ACCT-TABFI INVALID KEY
```

```
        MOVE SPACES TO FA-NAME (1), FA-NAME (2).
TOTAL-COST-CNTRS.
    ADD AMTS (1) TO ACCUM (CC-POS2, CC-POS4)
                    SUBS  (CC-POS2, CC-POS4).
    PERFORM READ-SORTED-FILE.
    IF MATCH-CODE EQUAL TO MATCH-HOLD THEN
        GO TO TOTAL-COST-CNTRS.
WRITE-PRINT-FILE.
    MOVE FA-NAME (1) TO DESC-HOLD (1).
    MOVE FA-NAME (2) TO DESC-HOLD (2).
    MOVE 1 TO K.
    PERFORM MOVE-ACCUMS VARYING I FROM 1 BY 1 UNTIL I = 5.
    WRITE PRINT-LINE-HOLD.
    PERFORM HOUSE-KEEP.
RETURN-TO-NEW-MATCH-CODE.
    GO TO NEW-MATCH-CODE.
MOVE-ACCUMS.
    PERFORM MOVE-ACCUMS-A VARYING L FROM 1 BY 1 UNTIL L = 6.
MOVE-ACCUMS-A.
    MOVE ACCUM (I, L) TO AMTS-HOLD (K).
    ADD 1 TO K.
WRITE-SUBTOTALS.
    WRITE PRINT-LINE-HOLD.
    MOVE 1 TO K.
    PERFORM MOVE-SUBS   VARYING I FROM 1 BY 1 UNTIL I = 5.
    MOVE 'TOTALS' TO DESC-HOLD (1).
    MOVE SPACES TO DESC-HOLD (2).
    WRITE PRINT-LINE-HOLD.
    GO TO HOUSE-KEEP-1.
MOVE-SUBS.
    PERFORM MOVE-SUBS-A VARYING L FROM 1 BY 1 UNTIL L = 6.
MOVE-SUBS-A.
    MOVE SUBS (I, L) TO AMTS-HOLD (K).
    ADD 1 TO K.
HOUSE-KEEP-1.
    MOVE -1 TO J.
    MOVE 0 TO O.
    PERFORM START-PRINTING THRU START-PRINTING-END
        VARYING I FROM 1 BY 1 UNTIL I = 5.
    GO TO CLOSE-FILES.
START-PRINTING.
    ADD 2 TO J, O.
    PERFORM REWIND-PRINT-FILE.
WRITE-HEADINGS.
    ADD 1 TO PAGE-CT.
    MOVE 1 TO LINE-CT.
    MOVE PAGE-CT TO PAGE-OUT.
    MOVE PAGE-LETTER (I) TO PAGE-LETTER-OUT.
    PERFORM MOVE-SPACES.
    WRITE PRINT-LINE BEFORE NEW-PAGE.
```

```
           MOVE HEAD-1 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-2 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-3 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
           MOVE HEAD-4 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-DATA (J) TO HEAD-OUT.
           MOVE HEAD-5 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-DATA (O) TO HEAD-OUT.
           MOVE HEAD-5 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
       READ-PRINT-FILE.
           READ PRINT-FILE AT END GO TO START-PRINTING-END.
       MOVE-VALUES-OUT.
           IF I = 1 THEN
           MOVE 1 TO N.
           IF I = 2 THEN
               MOVE 6  TO N.
           IF I = 3 THEN
               MOVE 11 TO N.
           IF I = 4 THEN
               MOVE 16 TO N.
           MOVE 1 TO M.
           PERFORM MOVE-VALUES 5 TIMES.
           MOVE DESC-HOLD (1) TO DESC.
           MOVE DATA-LINE TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           IF DESC-HOLD (2) NOT = SPACES THEN
               MOVE SPACES TO DATA-LINE
               MOVE DESC-HOLD (2) TO DESC
               MOVE DATA-LINE TO PRINT-DATA
               PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
           IF LINE-CT > MAX-LINE THEN
               PERFORM WRITE-HEADINGS.
           PERFORM READ-PRINT-FILE.
           IF PRINT-LINE-HOLD = SPACES THEN
               PERFORM MOVE-SPACES THRU PRINT-LINE-OUT
               PERFORM READ-PRINT-FILE.
           GO TO MOVE-VALUES-OUT.
       START-PRINTING-END.
           EXIT.
       MOVE-VALUES.
           IF AMTS-HOLD (N) = MINUS-ONE THEN
               MOVE ZERO TO AMT OF AMOUNTS (M)
```

```
         ELSE MOVE AMTS-HOLD (N) TO AMT OF AMOUNTS (M)
             ADD 1 TO M.
         ADD 1 TO N.
     REWIND-PRINT-FILE.
         MOVE ZERO TO PAGE-CT.
         CLOSE      PRINT-FILE.
         OPEN INPUT PRINT-FILE.
     MOVE-SPACES.
         MOVE SPACES TO PRINT-LINE.
     PRINT-LINE-OUT.
         WRITE PRINT-LINE BEFORE 1.
         ADD 1 TO LINE-CT.
     READ-SORT-INPUT.
         READ COST-MATRIX-FILE AT END
             GO TO READ-SORT-INPUT-END.
         IF MATCH-CODE-POS1 NOT = TO MATCH-POS1
             THEN GO TO READ-SORT-INPUT.
         RELEASE SORT-INPUT FROM CM-REC.
         GO TO READ-SORT-INPUT.
     READ-SORT-INPUT-END.
         EXIT.
     WRITE-SORT-OUTPUT.
         RETURN FILE-SORT RECORD INTO INPUT-REC
             AT END GO TO WRITE-SORT-OUTPUT-END.
         WRITE INPUT-REC.
         GO TO WRITE-SORT-OUTPUT.
     WRITE-SORT-OUTPUT-END.
         EXIT.
     CLOSE-FILES.
         CLOSE    SORTED-FILE,
                  CARD-IN,
                  COST-MATRIX-FILE,
                  FINANCIAL-ACCT-TABFI,
                  PRINT-FILE,
                  PRINT-OUT.
     E-O-J.
         STOP RUN.
```

```
  PGMNAME=WUASLV43
 .SYSIN     DD   *
  ID DIVISION.
  PROGRAM-ID. WUASLV43.
  AUTHOR. ACT SYSTEMS INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FLA 32789.
  DATE-WRITTEN. JAN 1978.
  DATE-COMPILED.
  REMARKS.    THIS PROGRAM SORTS THE COST MATRIX FILE BY
              MATCH CODE AND PRINTS OUT LEVEL IV (DELIVERY)
              REPORT.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
     CO1 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-MATRIX-FILE
          ASSIGN TO DA-3330-I-CMFILE
          ACCESS MODE IS SEQUENTIAL
          RECORD KEY IS CM-NUMBER.
      SELECT PRINT-FILE
          ASSIGN TO UT-3330-S-PRINTFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT FINANCIAL-ACCT-TABFI
          ASSIGN TO DA-3330-I-FATABFI
          ACCESS MODE IS RANDOM
          NOMINAL KEY IS FA-NOMINAL
          RECORD KEY IS FA-NUMBER.
      SELECT FILE-SORT
          ASSIGN TO UT-3330-S-FILESORT
          ACCESS MODE IS SEQUENTIAL.
      SELECT SORTED-FILE
          ASSIGN TO UT-3330-S-SORTEDFI
          ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
 FILE SECTION.
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
```

```
       DATA RECORD IS INPUT-CARD.
   01  INPUT-CARD.
       05  DATE-IN            PIC X(18).
       05  TITLE-IN           PIC X(24).
       05  FILLER             PIC X(38).
   FD  PRINT-OUT
       RECORD CONTAINS 133 CHARACTERS
       LABEL RECORDS ARE OMITTED
       DATA RECORD IS PRINT-LINE.
   01  PRINT-LINE.
       05  FILLER             PIC X.
       05  PRINT-DATA         PIC X(132).
   FD  COST-MATRIX-FILE
       RECORD CONTAINS 80 CHARACTERS
       BLOCK CONTAINS 5 RECORDS
       LABEL RECORDS ARE STANDARD
       DATA RECORD IS CM-REC.
   01  CM-REC.
       05  MATCH-CODE-POS1    PIC X.
       05  FILLER             PIC X(3).
       05  CM-NUMBER          PIC X(10).
       05  FILLER             PIC X(66).
   FD  PRINT-FILE
       BLOCK CONTAINS 6 RECORDS
       RECORD CONTAINS 220 CHARACTERS
       LABEL RECORDS ARE STANDARD
       DATA RECORD IS PRINT-LINE-HOLD.
   01  PRINT-LINE-HOLD.
       05  DESC-HOLD          PIC X(20) OCCURS 2 TIMES.
       05  AMTS-HOLD          PIC S9(8)V99 OCCURS 18 TIMES.
   FD  FINANCIAL-ACCT-TABFI
       BLOCK CONTAINS 8 RECORDS
       RECORD CONTAINS 58 CHARACTERS
       LABEL RECORDS ARE STANDARD
       DATA RECORD IS FA-REC.
   01  FA-REC.
       05  FA-NUMBER          PIC X(10).
       05  FA-NAME            PIC X(20) OCCURS 2 TIMES.
       05  FILLER             PIC X(8).
   SD  FILE-SORT
       RECORD CONTAINS 80 CHARACTERS
       DATA RECORD IS SORT-INPUT.
   01  SORT-INPUT.
       05  S-MATCH-CODE       PIC X(4).
       05  FILLER             PIC X(16).
       05  FILLER             PIC X(60).
   FD  SORTED-FILE
       RECORD CONTAINS 80 CHARACTERS
       BLOCK CONTAINS 5 RECORDS
       LABEL RECORDS ARE STANDARD
```

```
           DATA RECORD IS INPUT-REC.
       01  INPUT-REC.
           05  MATCH-CODE          PIC X(4).
           05  ACCT-NO             PIC X(10).
           05  COST-CNTR.
               10  FILLER          PIC X.
               10  CC-POS2         PIC 9.
               10  FILLER          PIC X.
               10  CC-POS4         PIC 9.
           05  COST-CAT            PIC XX.
           05  AMTS                PIC S9(8)V99 OCCURS 6 TIMES.
      *****
      *        THE ABOVE AMTS ARE AS FOLLOWS
      *          (1) -- CURRENT COST AMOUNT
      *          (2) -- PREVIOUS MONTH COST AMOUNT
      *          (3) -- CURRENT COST AMOUNT YEAR TO DATE (YTD)
      *          (4) -- BUDGET AMOUNT
      *          (5) -- BUDGET AMOUNT YEAR TO DATE
      *          (6) -- PREVIOUS YEAR COST AMOUNT (PYC)
      *****
       WORKING-STORAGE SECTION.
       77  PAGE-CT                 PIC 9(4)  VALUE ZERO.
       77  LINE-CT                 PIC 9(2)  VALUE ZERO.
       77  FA-NOMINAL              PIC X(10) VALUE SPACES.
       77  I                       PIC 9.
       77  J                       PIC S99.
       77  K                       PIC 99.
       77  L                       PIC 99.
       77  M                       PIC 99.
       77  N                       PIC 99.
       77  O                       PIC 99.
       77  MATCH-HOLD              PIC X(4)  VALUE SPACES.
       77  MATCH-POS1              PIC X     VALUE '3'.
       77  MAX-LINE                PIC 9(2)  COMP VALUE 56.
       77  MINUS-ONE               PIC S9(8)V99 VALUE -0.01.
       01  HEAD-1.
           05  FILLER              PIC X(57) VALUE SPACES.
           05  FILLER              PIC X(18) VALUE 'LEVEL IV REPORT OF'.
           05  FILLER              PIC X(57) VALUE SPACES.
       01  HEAD-2.
           05  FILLER              PIC X(6)  VALUE 'DATE: '.
           05  DATE-OUT            PIC X(18) VALUE SPACES.
           05  FILLER              PIC X(32) VALUE SPACES.
           05  FILLER              PIC X(21) VALUE ' DELIVERY COSTS FOR  '.
           05  FILLER              PIC X(41) VALUE SPACES.
           05  FILLER              PIC X(6)  VALUE 'PAGE: '.
           05  PAGE-OUT            PIC Z(4).
           05  FILLER              PIC X(3)  VALUE ' - '.
           05  PAGE-LETTER-OUT     PIC X.
       01  HEAD-3.
```

```
           05  FILLER                 PIC X(55) VALUE SPACES.
           05  TITLE-OUT              PIC X(24) VALUE SPACES.
           05  FILLER                 PIC X(53) VALUE SPACES.
       01  HEAD-4.
           05  FILLER                 PIC X(2)  VALUE SPACES.
           05  FILLER                 PIC X(26) VALUE 'COST CATEGORY DESCRIPTI
   -                                                  'ONS'.
           05  FILLER                 PIC X(6)  VALUE SPACES.
           05  FILLER                 PIC X(96) VALUE '***********************
   -                                  '*************       D E L I V E R Y     *
   -                                  '**********************************'.
           05  FILLER                 PIC X(2)  VALUE SPACES.
       01  HEAD-5.
           05  FILLER                 PIC X(34) VALUE SPACES.
           05  HEAD-OUT               PIC X(96).
           05  FILLER                 PIC X(2)  VALUE SPACES.
       01  DATA-LINE.
           05  FILLER                 PIC X(4)  VALUE SPACES.
           05  DESC                   PIC X(20).
           05  FILLER                 PIC X(2)  VALUE SPACES.
           05  AMOUNTS OCCURS 6 TIMES.
               10  FILLER             PIC X(6).
               10  AMT                PIC -(8).--.
           05  FILLER                 PIC X(2).
       01  ACCUMS.
               05  ACCUM-A OCCURS 4 TIMES.
                   10  ACCUM-B OCCURS 6 TIMES.
                       15  ACCUM PIC S9(8)V99.
       01  SUBTOTAL.
           05  SUB-A OCCURS 4 TIMES.
               10  SUB-B OCCURS 6 TIMES.
                   15  SUBS       PIC S9(8)V99.
       01  HEAD-DATA-HOLD.
           05  HEAD-DATA-A.
               10  FILLER             PIC X(96) VALUE '------------      TRANSMI
   -               'SSION      ------------      ------------      DISTRIBU
   -               'TION     ------------'.
               10  FILLER             PIC X(96) VALUE '      ZONE 1           ZO
   -               'NE 2          ZONE 3             ZONE 1           ZON
   -               'E 2          ZONE 3 '.
               10  FILLER             PIC X(96) VALUE '------------------------
   -               '----------------          STORAGE      ------------------
   -               '----------------------'.
               10  FILLER             PIC X(96) VALUE ' DUDLEY PIKE       BARRIN
   -               'GTON RD          EDGEWOOD        KENTON LANDS          IND
   -               'PARK         OBLIQUE ST'.
               10  FILLER             PIC X(96) VALUE '------------------------
   -               '--------------        PUMP STATION      ----------------
   -               '---------------------'.
               10  FILLER             PIC X(96) VALUE '       PLANT          DIXI
```

```
-              'E HWY         KYLES LANE          DUDLEY PIKE         TURKE
-              'Y FOOT       LAFAYETTE'.
      05  HEAD-DATA-B REDEFINES HEAD-DATA-A.
          10  HEAD-DATA       PIC X(96) OCCURS 6 TIMES.
  01  PAGE-LETTER-HOLD.
      05  PG-LTR-A            PIC X(3)  VALUE 'ABC'.
      05  PG-LTR-B REDEFINES PG-LTR-A.
          10  PAGE-LETTER  PIC X  OCCURS 3 TIMES.
 PROCEDURE DIVISICN.
 OPEN-FILES.
     OPEN INPUT  CARD-IN,
                 COST-MATRIX-FILE.
                 FINANCIAL-ACCT-TABFI,
          OUTPUT PRINT-OUT,
                 PRINT-FILE.
 READ-CARD-IN.
     READ CARD-IN AT END
          MOVE '*** NO DATE/TITLE CARD  ** JOB ABORTED ***' TO
          PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
          GO TO CLOSE-FILES.
     MOVE DATE-IN TO DATE-OUT.
     MOVE TITLE-IN TO TITLE-OUT.
 SORT-CM-FILE.
     OPEN OUTPUT SORTED-FILE.
     SORT FILE-SORT ON ASCENDING KEY
          S-MATCH-CODE
     INPUT PROCEDURE
          READ-SORT-INPUT THRU READ-SORT-INPUT-END
     OUTPUT PROCEDURE
          WRITE-SORT-OUTPUT THRU WRITE-SORT-OUTPUT-END.
     CLOSE SORTED-FILE.
     OPEN INPUT SORTED-FILE.
 ZERO-ACCUMS.
     MOVE ZEROS TO SUBTOTAL.
         MOVE MINUS-ONE TO SUBS  (1, 4) SUBS  (1, 5) SUBS  (1, 6)
                           SUBS  (2, 4) SUBS  (2, 5) SUBS  (2, 6).
 HOUSE-KEEP.
     MOVE SPACES TO PRINT-LINE-HOLD.
     MOVE ZEROS TO ACCUMS.
         MOVE MINUS-ONE TO ACCUM (1, 4) ACCUM (1, 5) ACCUM (1, 6)
                           ACCUM (2, 4) ACCUM (2, 5) ACCUM (2, 6).
 READ-SORTED-FILE.
     READ SORTED-FILE AT END PERFORM WRITE-PRINT-FILE,
     GO TO WRITE-SUBTOTALS.
 NEW-MATCH-CODE.
     MOVE MATCH-CODE TO MATCH-HOLD.
     MOVE ACCT-NO TO FA-NOMINAL.
     READ FINANCIAL-ACCT-TABFI INVALID KEY
          MOVE SPACES TO FA-NAME (1), FA-NAME (2).
```

```
TOTAL-COST-CNTRS.
    ADD AMTS (1) TO ACCUM (CC-POS2, CC-POS4)
                    SUBS  (CC-POS2, CC-POS4).
    PERFORM READ-SORTED-FILE.
    IF MATCH-CODE EQUAL TO MATCH-HOLD THEN
        GO TO TOTAL-COST-CNTRS.
WRITE-PRINT-FILE.
    MOVE FA-NAME (1) TO DESC-HOLD (1).
    MOVE FA-NAME (2) TO DESC-HOLD (2).
    MOVE 1 TO K.
    PERFORM MOVE-ACCUMS VARYING I FROM 1 BY 1 UNTIL I = 5.
    WRITE PRINT-LINE-HOLD.
    PERFORM HOUSE-KEEP.
RETURN-TO-NEW-MATCH-CODE.
    GO TO NEW-MATCH-CODE.
MOVE-ACCUMS.
    PERFORM MOVE-ACCUMS-A VARYING L FROM 1 BY 1 UNTIL L = 7.
MOVE-ACCUMS-A.
    IF ACCUM (I, L) NOT = MINUS-ONE THEN
        MOVE ACCUM (I, L) TO AMTS-HOLD (K)
        ADD 1 TO K.
WRITE-SUBTOTALS.
    WRITE PRINT-LINE-HOLD.
    MOVE 1 TO K.
    PERFORM MOVE-SUBS   VARYING I FROM 1 BY 1 UNTIL I = 5.
    MOVE 'TOTALS' TO DESC-HOLD (1).
    MOVE SPACES TO DESC-HOLD (2).
    WRITE PRINT-LINE-HOLD.
    GO TO HOUSE-KEEP-1.
MOVE-SUBS.
    PERFORM MOVE-SUBS-A VARYING L FROM 1 BY 1 UNTIL L = 7.
MOVE-SUBS-A.
    IF SUBS (I, L) NOT = MINUS-ONE THEN
        MOVE SUBS (I, L) TO AMTS-HOLD (K)
        ADD 1 TO K.
HOUSE-KEEP-1.
    MOVE -1 TO J.
    MOVE 0 TO D.
    PERFORM START-PRINTING THRU START-PRINTING-END
        VARYING I FROM 1 BY 1 UNTIL I = 4.
    GO TO CLOSE-FILES.
START-PRINTING.
    ADD 2 TO J, D.
    PERFORM REWIND-PRINT-FILE.
WRITE-HEADINGS.
    ADD 1 TO PAGE-CT.
    MOVE 1 TO LINE-CT.
    MOVE PAGE-CT TO PAGE-OUT.
    MOVE PAGE-LETTER (I) TO PAGE-LETTER-OUT.
    PERFORM MOVE-SPACES.
```

```
          WRITE PRINT-LINE BEFORE NEW-PAGE.
          MOVE HEAD-1 TO PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
          MOVE HEAD-2 TO PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
          MOVE HEAD-3 TO PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
          PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
          MOVE HEAD-4 TO PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
          MOVE HEAD-DATA (J) TO HEAD-OUT.
          MOVE HEAD-5 TO PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
          MOVE HEAD-DATA (O) TO HEAD-OUT.
          MOVE HEAD-5 TO PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
          PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
      READ-PRINT-FILE.
          READ PRINT-FILE AT END GO TO START-PRINTING-END.
      MOVE-VALUES-OUT.
          IF I = 1 THEN
          MOVE 1 TO N.
          IF I = 2 THEN
              MOVE 7 TO N.
          IF I = 3 THEN
              MOVE 13 TO N.
          MOVE 1 TO M.
          PERFORM MOVE-VALUES 6 TIMES.
          MOVE DESC-HOLD (1) TO DESC.
          MOVE DATA-LINE TO PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
          IF DESC-HOLD (2) NOT = SPACES THEN
              MOVE SPACES TO DATA-LINE
              MOVE DESC-HOLD (2) TO DESC
              MOVE DATA-LINE TO PRINT-DATA
              PERFORM PRINT-LINE-OUT.
          PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
          IF LINE-CT > MAX-LINE THEN
              PERFORM WRITE-HEADINGS.
          PERFORM READ-PRINT-FILE.
          GO TO MOVE-VALUES-OUT.
      START-PRINTING-END.
          EXIT.
      MOVE-VALUES.
          MOVE AMTS-HOLD (N) TO AMT OF AMOUNTS (M).
          ADD 1 TO N.
          ADD 1 TO M.
      REWIND-PRINT-FILE.
          MOVE ZERO TO PAGE-CT.
          CLOSE      PRINT-FILE.
```

```
     OPEN INPUT PRINT-FILE.
MOVE-SPACES.
     MOVE SPACES TO PRINT-LINE.
PRINT-LINE-OUT.
     WRITE PRINT-LINE BEFORE 1.
     ADD 1 TO LINE-CT.
READ-SORT-INPUT.
     READ COST-MATRIX-FILE AT END
          GO TO READ-SORT-INPUT-END.
     IF MATCH-CODE-POS1 NOT = TO MATCH-POS1
          THEN GO TO READ-SORT-INPUT.
     RELEASE SORT-INPUT FROM CM-REC.
     GO TO READ-SORT-INPUT.
READ-SORT-INPUT-END.
     EXIT.
WRITE-SORT-OUTPUT.
     RETURN FILE-SORT RECORD INTO INPUT-REC
          AT END GO TO WRITE-SORT-OUTPUT-END.
     WRITE INPUT-REC.
     GO TO WRITE-SORT-OUTPUT.
WRITE-SORT-OUTPUT-END.
     EXIT.
CLOSE-FILES.
     CLOSE    SORTED-FILE,
              CARD-IN,
              COST-MATRIX-FILE,
              FINANCIAL-ACCT-TABFI,.
              PRINT-FILE,
              PRINT-OUT.
E-O-J.
     STOP RUN.
```

```
 PGMNAME=WUASLV42
.SYSIN     DD  *
 ID DIVISION.
 PROGRAM-ID. WUASLV42.
 AUTHOR. ACT SYSTEMS INC
         SUITE 200
         807 W MORSE BLVD
         WINTER PARK, FLA 32789.
 DATE-WRITTEN. JAN 1978.
 DATE-COMPILED.
 REMARKS.    THIS PROGRAM SORTS THE COST MATRIX FILE BY
             MATCH CODE AND PRINTS OUT LEVEL IV (TREATMENT)
             REPORT.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 SOURCE-COMPUTER. IBM-370.
 OBJECT-COMPUTER. IBM-370.
 SPECIAL-NAMES.
     C01 IS NEW-PAGE.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
     SELECT CARD-IN
         ASSIGN TO UR-2540R-S-CARDIN
         ACCESS MODE IS SEQUENTIAL.
     SELECT PRINT-OUT
         ASSIGN TO UR-1403-S-PRINTOUT
         ACCESS MODE IS SEQUENTIAL.
     SELECT COST-MATRIX-FILE
         ASSIGN TO DA-3330-I-CMFILE
         ACCESS MODE IS SEQUENTIAL
         RECORD KEY IS CM-NUMBER.
     SELECT FINANCIAL-ACCT-TABFI
         ASSIGN TO DA-3330-I-FATABFI
         ACCESS MODE IS RANDOM
         NOMINAL KEY IS FA-NOMINAL
         RECORD KEY IS FA-NUMBER.
     SELECT FILE-SORT
         ASSIGN TO UT-3330-S-FILESORT
         ACCESS MODE IS SEQUENTIAL.
     SELECT SORTED-FILE
         ASSIGN TO UT-3330-S-SORTEDFI
         ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
 FILE SECTION.
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     05  DATE-IN            PIC X(18).
```

```
           05  TITLE-IN          PIC X(24).
           05  FILLER            PIC X(38).
       FD  PRINT-OUT
           RECORD CONTAINS 133 CHARACTERS
           LABEL RECORDS ARE OMITTED
           DATA RECORD IS PRINT-LINE.
       01  PRINT-LINE.
           05  FILLER            PIC X.
           05  PRINT-DATA        PIC X(132).
       FD  COST-MATRIX-FILE
           RECORD CONTAINS 80 CHARACTERS
           BLOCK CONTAINS 5 RECORDS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS CM-REC.
       01  CM-REC.
           05  MATCH-CODE-POS1   PIC X.
           05  FILLER            PIC X(3).
           05  CM-NUMBER         PIC X(10).
           05  FILLER            PIC X(66).
       FD  FINANCIAL-ACCT-TABFI
           BLOCK CONTAINS 8 RECORDS
           RECORD CONTAINS 58 CHARACTERS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS FA-REC.
       01  FA-REC.
           05  FA-NUMBER         PIC X(10).
           05  FA-NAME           PIC X(20) OCCURS 2 TIMES.
           05  FILLER            PIC X(8).
       SD  FILE-SORT
           RECORD CONTAINS 80 CHARACTERS
           DATA RECORD IS SORT-INPUT.
       01  SORT-INPUT.
           05  S-MATCH-CODE      PIC X(4).
           05  FILLER            PIC X(16).
           05  FILLER            PIC X(60).
       FD  SORTED-FILE
           RECORD CONTAINS 80 CHARACTERS
           BLOCK CONTAINS 5 RECORDS
           LABEL RECORDS ARE STANDARD
           DATA RECORD IS INPUT-REC.
       01  INPUT-REC.
           05  MATCH-CODE        PIC X(4).
           05  ACCT-NO           PIC X(10).
           05  COST-CNTR.
               10  FILLER        PIC X.
               10  CC-POS2       PIC 9.
               10  FILLER        PIC XX.
           05  COST-CAT          PIC XX.
           05  AMTS              PIC S9(8)V99 OCCURS 6 TIMES.
*****
```

```
*      THE ABOVE AMTS ARE AS FOLLOWS
*         (1) -- CURRENT COST AMOUNT
*         (2) -- PREVIOUS MONTH COST AMOUNT
*         (3) -- CURRENT COST AMOUNT YEAR TO DATE (YTD)
*         (4) -- BUDGET AMOUNT
*         (5) -- BUDGET AMOUNT YEAR TO DATE
*         (6) -- PREVIOUS YEAR COST AMOUNT (PYC)
*****
 WORKING-STORAGE SECTION.
 77  PAGE-CT                 PIC 9(4)  VALUE ZERO.
 77  LINE-CT                 PIC 9(2)  VALUE ZERO.
 77  FA-NOMINAL              PIC X(10) VALUE SPACES.
 77  I                       PIC 9.
 77  MATCH-HOLD              PIC X(4)  VALUE SPACES.
 77  MATCH-POS1              PIC X     VALUE '2'.
 77  MAX-LINE                PIC 9(2)  COMP VALUE 56.
 01  HEAD-1.
     05  FILLER              PIC X(57) VALUE SPACES.
     05  FILLER              PIC X(18) VALUE 'LEVEL IV REPORT OF'.
     05  FILLER              PIC X(57) VALUE SPACES.
 01  HEAD-2.
     05  FILLER              PIC X(6)  VALUE 'DATE: '.
     05  DATE-OUT            PIC X(18) VALUE SPACES.
     05  FILLER              PIC X(32) VALUE SPACES.
     05  FILLER              PIC X(21) VALUE ' TREATMENT COSTS FOR '.
     05  FILLER              PIC X(45) VALUE SPACES.
     05  FILLER              PIC X(6)  VALUE 'PAGE: '.
     05  PAGE-OUT            PIC Z(4).
 01  HEAD-3.
     05  FILLER              PIC X(55) VALUE SPACES.
     05  TITLE-OUT           PIC X(24) VALUE SPACES.
     05  FILLER              PIC X(53) VALUE SPACES.
 01  HEAD-4.
     05  FILLER              PIC X(27) VALUE SPACES.
     05  FILLER              PIC X(26) VALUE 'COST CATEGORY DESCRIPTI
-                                      'ONS'.
     05  FILLER              PIC X(18) VALUE SPACES.
     05  FILLER              PIC X(39) VALUE '*********  T R E A T M E
-                                'N T *********'.
     05  FILLER              PIC X(22) VALUE SPACES.
 01  HEAD-5.
     05  FILLER              PIC X(71) VALUE SPACES.
     05  FILLER              PIC X(12) VALUE 'PURIFICATION'.
     05  FILLER              PIC X(13) VALUE SPACES.
     05  FILLER              PIC X(14) VALUE 'PLANT OVERHEAD'.
     05  FILLER              PIC X(22) VALUE SPACES.
 01  HEAD-6.
     05  FILLER              PIC X(75) VALUE SPACES.
     05  FILLER              PIC X(5)  VALUE 'RIVER'.
     05  FILLER              PIC X(20) VALUE SPACES.
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        05  FILLER              PIC X(5)  VALUE 'RIVER'.
        05  FILLER              PIC X(27) VALUE SPACES.
    01  DATA-LINE.
        05  FILLER              PIC X(30).
        05  DESC                PIC X(20).
        05  FILLER              PIC X(6).
        05  AMOUNTS OCCURS 2 TIMES.
            10  FILLER          PIC X(14).
            10  AMT             PIC -(8).--.
        05  FILLER              PIC X(26).
    01  ACCUMS.
        05  ACCUM               PIC S9(8)V99 OCCURS 2 TIMES.
    01  SUBTOTALS.
        05  SUBS                PIC S9(8)V99 OCCURS 2 TIMES.
    PROCEDURE DIVISION.
    OPEN-FILES.
        OPEN INPUT  CARD-IN,
                    COST-MATRIX-FILE.
                    FINANCIAL-ACCT-TABFI,
               OUTPUT PRINT-OUT.
    READ-CARD-IN.
        READ CARD-IN AT END
            MOVE '*** NO DATE/TITLE CARD  ** JOB ABORTED ***' TO
            PRINT-DATA,
            PERFORM PRINT-LINE-OUT,
            GO TO CLOSE-FILES.
        MOVE DATE-IN TO DATE-OUT.
        MOVE TITLE-IN TO TITLE-OUT.
    SORT-CM-FILE.
        OPEN OUTPUT SORTED-FILE.
        SORT FILE-SORT ON ASCENDING KEY
            S-MATCH-CODE
        INPUT PROCEDURE
            READ-SORT-INPUT THRU READ-SORT-INPUT-END
        OUTPUT PROCEDURE
            WRITE-SORT-OUTPUT THRU WRITE-SORT-OUTPUT-END.
        CLOSE SORTED-FILE.
        OPEN  INPUT SORTED-FILE.
    WRITE-HEADINGS.
        MOVE ZERO TO LINE-CT.
        ADD 1 TO PAGE-CT.
        MOVE PAGE-CT TO PAGE-OUT.
        PERFORM MOVE-SPACES.
        WRITE PRINT-LINE BEFORE NEW-PAGE.
        MOVE HEAD-1 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE HEAD-2 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        MOVE HEAD-3 TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
```

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         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
         MOVE HEAD-4 TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         MOVE HEAD-5 TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         MOVE HEAD-6 TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
     ZERO-ACCUMS.
         MOVE ZEROS TO SUBTOTALS.
     HOUSE-KEEP.
         MOVE SPACES TO DATA-LINE.
         MOVE ZEROS TO ACCUMS.
     READ-SORTED-FILE.
         READ SORTED-FILE AT END PERFORM WRITE-LINE-OUT.
         GO TO WRITE-SUBTOTALS.
     NEW-MATCH-CODE.
         MOVE MATCH-CODE TO MATCH-HOLD.
         MOVE ACCT-NO TO FA-NOMINAL.
         READ FINANCIAL-ACCT-TABFI INVALID KEY
             MOVE SPACES TO FA-NAME (1), FA-NAME (2).
     TOTAL-COST-CNTRS.
         ADD AMTS (1) TO ACCUM (CC-POS2), SUBS (CC-POS2).
         PERFORM READ-SORTED-FILE.
         IF MATCH-CODE EQUAL TO MATCH-HOLD THEN
             GO TO TOTAL-COST-CNTRS.
     WRITE-LINE-OUT.
         MOVE FA-NAME (1) TO DESC.
         PERFORM MOVE-ACCUMS VARYING I FROM 1 BY 1 UNTIL I = 3.
         MOVE DATA-LINE TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
         IF FA-NAME (2) NOT EQUAL TO SPACES THEN
             MOVE SPACES TO DATA-LINE.
             MOVE FA-NAME (2) TO DESC.
             MOVE DATA-LINE TO PRINT-DATA.
             PERFORM PRINT-LINE-OUT.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
         PERFORM HOUSE-KEEP.
     CHECK-FOR-NEW-HEADING.
         IF LINE-CT NOT < MAX-LINE THEN
             PERFORM WRITE-HEADINGS.
         GO TO NEW-MATCH-CODE.
     WRITE-SUBTOTALS.
         PERFORM MOVE-SPACES.
         PERFORM PRINT-LINE-OUT 2 TIMES.
         PERFORM HOUSE-KEEP.
         MOVE 'TOTALS' TO DESC.
         PERFORM MOVE-AMOUNTS VARYING I FROM 1 BY 1 UNTIL I = 3.
         MOVE DATA-LINE TO PRINT-DATA.
         PERFORM PRINT-LINE-OUT.
```

```
    GO TO CLOSE-FILES.
MOVE-SPACES.
    MOVE SPACES TO PRINT-LINE.
PRINT-LINE-OUT.
    WRITE PRINT-LINE BEFORE 1.
    ADD 1 TO LINE-CT.
MOVE-ACCUMS.
    MOVE ACCUM (I) TO AMT OF AMOUNTS (I).
MOVE-AMOUNTS.
    MOVE SUBS (I) TO AMT OF AMOUNTS (I).
READ-SORT-INPUT.
    READ COST-MATRIX-FILE AT END
        GO TO READ-SORT-INPUT-END.
    IF MATCH-CODE-POS1 NOT = TO MATCH-POS1
        THEN GO TO READ-SORT-INPUT.
    RELEASE SORT-INPUT FROM CM-REC.
    GO TO READ-SORT-INPUT.
READ-SORT-INPUT-END.
    EXIT.
WRITE-SORT-OUTPUT.
    RETURN FILE-SORT RECORD INTO INPUT-REC
        AT END GO TO WRITE-SORT-OUTPUT-END.
    WRITE INPUT-REC.
    GO TO WRITE-SORT-OUTPUT.
WRITE-SORT-OUTPUT-END.
    EXIT.
CLOSE-FILES.
    CLOSE   SORTED-FILE,
            CARD-IN,
            COST-MATRIX-FILE,
            FINANCIAL-ACCT-TABFI.
            PRINT-OUT.
E-O-J.
    STOP RUN.
```

```
 PGMNAME=WUASLV41
.SYSIN    DD  *
 ID DIVISION.
 PROGRAM-ID. WUASLV41.
 AUTHOR. ACT SYSTEMS INC
         SUITE 200
         807 W MORSE BLVD
         WINTER PARK, FLA 32789.
 DATE-WRITTEN. JAN 1978.
 DATE-COMPILED.
 REMARKS.     THIS PROGRAM SORTS THE COST MATRIX FILE BY
              MATCH CODE AND PRINTS OUT LEVEL IV (ACQUISITION)
              REPORT.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 SOURCE-COMPUTER. IBM-370.
 OBJECT-COMPUTER. IBM-370.
 SPECIAL-NAMES.
     C01 IS NEW-PAGE.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
     SELECT CARD-IN
         ASSIGN TO UR-2540R-S-CARDIN
         ACCESS MODE IS SEQUENTIAL.
     SELECT PRINT-OUT
         ASSIGN TO UR-1403-S-PRINTOUT
         ACCESS MODE IS SEQUENTIAL.
     SELECT COST-MATRIX-FILE
         ASSIGN TO DA-3330-I-CMFILE
         ACCESS MODE IS SEQUENTIAL
         RECORD KEY IS CM-NUMBER.
     SELECT FINANCIAL-ACCT-TABFI
         ASSIGN TO DA-3330-I-FATABFI
         ACCESS MODE IS RANDOM
         NOMINAL KEY IS FA-NOMINAL
         RECORD KEY IS FA-NUMBER.
     SELECT FILE-SORT
         ASSIGN TO UT-3330-S-FILESORT
         ACCESS MODE IS SEQUENTIAL.
     SELECT SORTED-FILE
         ASSIGN TO UT-3330-S-SORTEDFI
         ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
 FILE SECTION.
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     05  DATE-IN           PIC X(18).
```

```
          05  TITLE-IN          PIC X(24).
          05  FILLER            PIC X(38).
      FD  PRINT-OUT
          RECORD CONTAINS 133 CHARACTERS
          LABEL RECORDS ARE OMITTED
          DATA RECORD IS PRINT-LINE.
      01  PRINT-LINE.
          05  FILLER            PIC X.
          05  PRINT-DATA        PIC X(132).
      FD  COST-MATRIX-FILE
          RECORD CONTAINS 80 CHARACTERS
          BLOCK CONTAINS 5 RECORDS
          LABEL RECORDS ARE STANDARD
          DATA RECORD IS CM-REC.
      01  CM-REC.
          05  MATCH-CODE-POS1   PIC X.
          05  FILLER            PIC X(3).
          05  CM-NUMBER         PIC X(10).
          05  FILLER            PIC X(66).
      FD  FINANCIAL-ACCT-TABFI
          BLOCK CONTAINS 8 RECORDS
          RECORD CONTAINS 58 CHARACTERS
          LABEL RECORDS ARE STANDARD
          DATA RECORD IS FA-REC.
      01  FA-REC.
          05  FA-NUMBER         PIC X(10).
          05  FA-NAME           PIC X(20) OCCURS 2 TIMES.
          05  FILLER            PIC X(8).
      SD  FILE-SORT
          RECORD CONTAINS 80 CHARACTERS
          DATA RECORD IS SORT-INPUT.
      01  SORT-INPUT.
          05  S-MATCH-CODE      PIC X(4).
          05  FILLER            PIC X(16).
          05  FILLER            PIC X(60).
      FD  SORTED-FILE
          RECORD CONTAINS 80 CHARACTERS
          BLOCK CONTAINS 5 RECORDS
          LABEL RECORDS ARE STANDARD
          DATA RECORD IS INPUT-REC.
      01  INPUT-REC.
          05  MATCH-CODE        PIC X(4).
          05  ACCT-NO           PIC X(10).
          05  COST-CNTR.
              10  FILLER        PIC X.
              10  CC-POS2       PIC 9.
              10  FILLER        PIC XX.
          05  COST-CAT          PIC XX.
          05  AMTS              PIC S9(8)V99 OCCURS 6 TIMES.
*****
```

```
*       THE ABOVE AMTS ARE AS FOLLOWS
*          (1) -- CURRENT COST AMOUNT
*          (2) -- PREVIOUS MONTH COST AMOUNT
*          (3) -- CURRENT COST AMOUNT YEAR TO DATE (YTD)
*          (4) -- BUDGET AMOUNT
*          (5) -- BUDGET AMOUNT YEAR TO DATE
*          (6) -- PREVIOUS YEAR COST AMOUNT (PYC)
*****
 WORKING-STORAGE SECTION.
 77  PAGE-CT                PIC 9(4)  VALUE ZERO.
 77  LINE-CT                PIC 9(2)  VALUE ZERO.
 77  FA-NOMINAL             PIC X(10) VALUE SPACES.
 77  I                      PIC 9.
 77  MATCH-HOLD             PIC X(4)  VALUE SPACES.
 77  MATCH-POS1             PIC X     VALUE '1'.
 77  MAX-LINE               PIC 9(2)  COMP VALUE 56.
 01  HEAD-1.
     05  FILLER             PIC X(57) VALUE SPACES.
     05  FILLER             PIC X(18) VALUE 'LEVEL IV REPORT OF'.
     05  FILLER             PIC X(57) VALUE SPACES.
 01  HEAD-2.
     05  FILLER             PIC X(6)  VALUE 'DATE: '.
     05  DATE-OUT           PIC X(18) VALUE SPACES.
     05  FILLER             PIC X(32) VALUE SPACES.
     05  FILLER             PIC X(21) VALUE 'ACQUISITION COSTS FOR'.
     05  FILLER             PIC X(45) VALUE SPACES.
     05  FILLER             PIC X(6)  VALUE 'PAGE: '.
     05  PAGE-OUT           PIC Z(4).
 01  HEAD-3.
     05  FILLER             PIC X(55) VALUE SPACES.
     05  TITLE-OUT          PIC X(24) VALUE SPACES.
     05  FILLER             PIC X(53) VALUE SPACES.
 01  HEAD-4.
     05  FILLER             PIC X(5)  VALUE SPACES.
     05  FILLER             PIC X(26) VALUE 'COST CATEGORY DESCRIPTI
-                                     'ONS'.
     05  FILLER             PIC X(14) VALUE SPACES.
     05  FILLER             PIC X(82) VALUE '***********************
-                                     '**     A C Q U I S I T
-                                     'I O N     *************
-                                     '*************'.
     05  FILLER             PIC X(5)  VALUE SPACES.
 01  HEAD-5.
     05  FILLER             PIC X(49) VALUE SPACES.
     05  FILLER             PIC X(5)  VALUE 'RIVER'.
     05  FILLER             PIC X(14) VALUE SPACES.
     05  FILLER             PIC X(12) VALUE 'TRANSMISSION'.
     05  FILLER             PIC X(11) VALUE SPACES.
     05  FILLER             PIC X(12) VALUE 'PUMP STATION'.
     05  FILLER             PIC X(9)  VALUE SPACES.
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    05  FILLER               PIC X(15) VALUE 'PURCHASED WATER'.
    05  FILLER               PIC X(5)  VALUE SPACES.
01  DATA-LINE.
    05  FILLER               PIC X(8).
    05  DESC                 PIC X(20).
    05  FILLER               PIC X(4).
    05  AMOUNTS OCCURS 4 TIMES.
        10  FILLER           PIC X(12).
        10  AMT              PIC -(8).--.
    05  FILLER               PIC X(8).
01  ACCUMS.
    05  ACCUM                PIC S9(8)V99 OCCURS 4 TIMES.
01  SUBTOTALS.
    05  SUBS                 PIC S9(8)V99 OCCURS 4 TIMES.
PROCEDURE DIVISION.
OPEN-FILES.
    OPEN INPUT  CARD-IN,
                COST-MATRIX-FILE,
                FINANCIAL-ACCT-TABFI,
         OUTPUT PRINT-OUT.
READ-CARD-IN.
    READ CARD-IN AT END
        MOVE '*** NO DATE/TITLE CARD  ** JOB ABORTED ***' TO
        PRINT-DATA,
        PERFORM PRINT-LINE-OUT,
        GO TO CLOSE-FILES.
    MOVE DATE-IN TO DATE-OUT.
    MOVE TITLE-IN TO TITLE-OUT.
SORT-CM-FILE.
    OPEN OUTPUT SORTED-FILE.
    SORT FILE-SORT ON ASCENDING KEY
        S-MATCH-CODE
    INPUT PROCEDURE
        READ-SORT-INPUT THRU READ-SORT-INPUT-END
    OUTPUT PROCEDURE
        WRITE-SORT-OUTPUT THRU WRITE-SORT-OUTPUT-END.
    CLOSE SORTED-FILE.
    OPEN INPUT SORTED-FILE.
WRITE-HEADINGS.
    MOVE ZERO TO LINE-CT.
    ADD 1 TO PAGE-CT.
    MOVE PAGE-CT TO PAGE-OUT.
    PERFORM MOVE-SPACES.
    WRITE PRINT-LINE BEFORE NEW-PAGE.
    MOVE HEAD-1 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE HEAD-2 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE HEAD-3 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    MOVE HEAD-4 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE HEAD-5 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
ZERO-ACCUMS.
    MOVE ZEROS TO SUBTOTALS.
HOUSE-KEEP.
    MOVE SPACES TO DATA-LINE.
    MOVE ZEROS TO ACCUMS.
READ-SORTED-FILE.
    READ SORTED-FILE AT END PERFORM WRITE-LINE-OUT,
    GO TO WRITE-SUBTOTALS.
NEW-MATCH-CODE.
    MOVE MATCH-CODE TO MATCH-HOLD.
    MOVE ACCT-NO TO FA-NOMINAL.
    READ FINANCIAL-ACCT-TABFI INVALID KEY
        MOVE SPACES TO FA-NAME (1), FA-NAME (2).
TOTAL-COST-CNTRS.
    ADD AMTS (1) TO ACCUM (CC-POS2), SUBS (CC-POS2).
    PERFORM READ-SORTED-FILE.
    IF MATCH-CODE EQUAL TO MATCH-HOLD THEN
        GO TO TOTAL-COST-CNTRS.
WRITE-LINE-OUT.
    MOVE FA-NAME (1) TO DESC.
    PERFORM MOVE-ACCUMS VARYING I FROM 1 BY 1 UNTIL I = 5.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    IF FA-NAME (2) NOT EQUAL TO SPACES THEN
        MOVE SPACES TO DATA-LINE,
        MOVE FA-NAME (2) TO DESC,
        MOVE DATA-LINE TO PRINT-DATA,
        PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    PERFORM HOUSE-KEEP.
CHECK-FOR-NEW-HEADING.
    IF LINE-CT NOT < MAX-LINE THEN
        PERFORM WRITE-HEADINGS.
    GO TO NEW-MATCH-CODE.
WRITE-SUBTOTALS.
    PERFORM MOVE-SPACES.
    PERFORM PRINT-LINE-OUT 2 TIMES.
    PERFORM HOUSE-KEEP.
    MOVE 'TOTALS' TO DESC.
    PERFORM MOVE-AMOUNTS VARYING I FROM 1 BY 1 UNTIL I = 5.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    GO TO CLOSE-FILES.
MOVE-SPACES.
```

```
           MOVE SPACES TO PRINT-LINE.
       PRINT-LINE-OUT.
           WRITE PRINT-LINE BEFORE 1.
           ADD 1 TO LINE-CT.
       MOVE-ACCUMS.
           MOVE ACCUM (I) TO AMT OF AMOUNTS (I).
       MOVE-AMOUNTS.
           MOVE SUBS (I) TO AMT OF AMOUNTS (I).
       READ-SORT-INPUT.
           READ COST-MATRIX-FILE AT END
               GO TO READ-SORT-INPUT-END.
           IF MATCH-CODE-POS1 NOT = TO MATCH-POS1
               THEN GO TO READ-SORT-INPUT.
           RELEASE SORT-INPUT FROM CM-REC.
           GO TO READ-SORT-INPUT.
       READ-SORT-INPUT-END.
           EXIT.
       WRITE-SORT-OUTPUT.
           RETURN FILE-SORT RECORD INTO INPUT-REC
               AT END GO TO WRITE-SORT-OUTPUT-END.
           WRITE INPUT-REC.
           GO TO WRITE-SORT-OUTPUT.
       WRITE-SORT-OUTPUT-END.
           EXIT.
       CLOSE-FILES.
           CLOSE   SORTED-FILE,
                   CARD-IN,
                   COST-MATRIX-FILE,
                   FINANCIAL-ACCT-TABFI,
                   PRINT-OUT.
       E-O-J.
           STOP RUN.
```

```
      PGMNAME=WUASPLV3
.SYSIN    DD  *
  ID DIVISION.
  PROGRAM-ID. WUASPLV3.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN.  NOV 16, 1977.
  DATE-COMPILED. NOV 18, 1977.
  REMARKS.     THIS PROGRAM READS THE COST MATRIX FILE,
               SUMS ALL TOTALS AND PRODUCES A LEVEL III
               REPORT.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT COST-MATRIX-FILE
          ASSIGN TO DA-3330-I-CMFILE
          ACCESS MODE IS SEQUENTIAL
          RECORD KEY IS CM-NUMBER.
      SELECT PRINTER
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT READER
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
 FILE SECTION.
 FD  COST-MATRIX-FILE
     RECORD CONTAINS 80 CHARACTERS
     BLOCK CONTAINS 5 RECORDS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS INPUT-REC.
 01  INPUT-REC.
     05  MATCH-CODE        PIC 9(4).
     05  CM-NUMBER.
         10  ACCT-NO       PIC X(10).
         10  COST-CNTR.
             15  CC-POS1   PIC 9.
             15  FILLER    PIC 999.
         10  COST-CAT      PIC 99.
     05  AMTS              PIC S9(8)V99 OCCURS 6 TIMES.
 FD  READER
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS CARD-IN.
 01  CARD-IN.
     05  DATE-IN              PIC X(18).
     05  TITLE-IN             PIC X(24).
     05  PERIOD-IN            PIC X(7).
     05  FILLER               PIC X(31).
 FD  PRINTER
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINTER-DATA.
 01  PRINTER-DATA.
     02  FILLER               PIC X.
     02  PRINT-LINE           PIC X(132).
 WORKING-STORAGE SECTION.
 77  PER                      PIC 9 COMP VALUE 0.
 77  CAT                      PIC 99 COMP VALUE 0.
 77  FUN                      PIC 9 COMP VALUE 0.
 77  I                        PIC 99 COMP VALUE 0.
 77  J                        PIC 99 COMP VALUE 0.
 77  K                        PIC 9  COMP VALUE 0.
 77  LINE-TOTAL-1             PIC X(10).
 77  LINE-TOTAL REDEFINES LINE-TOTAL-1 PIC S9(8)V99.
 01  ACCUM-MAT.
     05  PERIOD-1 OCCURS 2 TIMES.
         10  CATEGORY-1 OCCURS 12 TIMES.
             15  FUNCTION-1 OCCURS 6 TIMES.
               20  AMOUNT-1 PIC X(10).
 01  ACCUM-MATRIX REDEFINES ACCUM-MAT.
     05  PERIOD OCCURS 2 TIMES.
         10  CATEGORY  OCCURS 12 TIMES.
             15  FUNCTION  OCCURS 6 TIMES.
               20  AMOUNT PIC S9(8)V99.
 01  SUBS-1.
     05  SUB-TOTALS-1 OCCURS 2 TIMES.
         10  SUB-TOTAL-1 OCCURS 8 TIMES PIC X(10).
 01  SUBS REDEFINES SUBS-1.
     05  SUB-TOTALS OCCURS 2 TIMES.
         10  SUB-TOTAL OCCURS 8 TIMES PIC S9(8)V99.
 01  GRAND-1.
     05  GRAND-TOTALS-1 OCCURS 2 TIMES.
         10  GRAND-TOTAL-1 OCCURS 8 TIMES PIC X(10).
 01  GRAND REDEFINES GRAND-1.
     05  GRAND-TOTALS OCCURS 2 TIMES.
         10  GRAND-TOTAL OCCURS 8 TIMES PIC S9(8)V99.
 01  CATEGORY-TITLES.
     05  TITLES1.
         10  TL1              PIC X(108) VALUE       '    COST CATEGORY
-                                                'PAYROLL COST:
-                                                '    MANAGEMENT AND
-                                                '    SUPERVISION
-                                                   '    OPERATION
-                                                 '   LABOR          '.
          10   TL2           PIC X(108) VALUE       '    MAINTENANCE
-                                                   '    OTHER
-                                                   '    TOTAL
-                                                   '    BENEFITS
-                                                   '    TOTAL PAYROLL
-                                                 '   COST           '.
          10   TL3           PIC X(108) VALUE       '
-                                                   '    CHEMICALS
-                                                   '    POWER
-                                                   '    MISCELLANEOUS
-                                                   'TOTAL PAYROLL AND
-                                                 'DEPRECIATION      '.
          10   TL4           PIC X(72)  VALUE       'TOTAL
-                                                   'INTEREST
-                                                   'TAXES
-                                                 'OTHER DIRECT COSTS'.
       05   TITLES REDEFINES TITLES1  OCCURS 22 TIMES PIC X(18).
   01   HEADING-1.
        02   PERIOD-OUT          PIC X(7).
        02   FILLER              PIC X(45) VALUE SPACES.
        02   FILLER              PIC X(26) VALUE
-                                          'LEVEL III  SUMMARY OF COST'.
        02   FILLER              PIC X(54) VALUE SPACES.
   01   HEADING-2.
        02   FILLER              PIC X(9) VALUE 'ENDING:  '.
        02   DATE-OUT            PIC X(20) VALUE SPACES.
        02   FILLER              PIC X(34) VALUE SPACES.
        02   FILLER              PIC X(3) VALUE 'FOR'.
        02   FILLER              PIC X(54) VALUE SPACES.
        02   PAGE-OUT            PIC X(12) VALUE 'PAGE 1 OF 2 '.
   01   HEADING-3.
        02   FILLER              PIC X(52) VALUE SPACES.
        02   LOCATION-OUT        PIC X(25) VALUE SPACES.
        02   FILLER              PIC X(55) VALUE SPACES.
   01   HEADING-4.
        02   FILLER              PIC X(18) VALUE SPACES.
        02   FILLER              PIC X(11) VALUE 'FUNCTION:  '.
        02   FILLER              PIC XX    VALUE SPACES.
        02   FILLER              PIC X(11) VALUE 'ACQUISITION'.
        02   FILLER              PIC X(3)  VALUE SPACES.
        02   FILLER              PIC X(9)  VALUE 'TREATMENT'.
        02   FILLER              PIC X(5)  VALUE SPACES.
        02   FILLER              PIC X(8)  VALUE 'DELIVERY'.
        02   FILLER              PIC X(5)  VALUE SPACES.
        02   FILLER              PIC X(7) VALUE 'SUPPORT'.
        02   FILLER              PIC X(6) VALUE SPACES.
        02   FILLER              PIC X(8) VALUE 'INTEREST'.
        02   FILLER              PIC X(8)  VALUE SPACES.
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           02  FILLER            PIC X(5) VALUE 'TOTAL'.
           02  FILLER            PIC X(6)  VALUE SPACES.
           02  FILLER            PIC X(5) VALUE 'TAXES'.
           02  FILLER            PIC X(8) VALUE SPACES.
           02  FILLER            PIC X(5) VALUE 'TOTAL'.
           02  FILLER            PIC XX    VALUE SPACES.
       01  HEADING-5.
           02  FILLER            PIC X(72) VALUE SPACES.
           02  FILLER            PIC X(8) VALUE 'SERVICES'.
           02  FILLER            PIC X(42) VALUE SPACES.
           02  FILLER            PIC X(10) VALUE 'WITH TAXES'.
       01  DATA-LINE.
           05  TITLE-OUT         PIC X(18) VALUE SPACES.
           05  FILLER            PIC X(3)  VALUE SPACES.
           05  PERIODS           PIC X(7)  VALUE SPACES.
           05  AMOUNTS-OUT       PIC --,---,--9.99 OCCURS 8 TIMES.
       PROCEDURE DIVISION.
       OPEN-FILES.
           OPEN INPUT COST-MATRIX-FILE, READER,
                OUTPUT PRINTER.
       READ-CARD-IN.
           READ READER AT END MOVE '***** NO DATE CARD *****'
               TO PRINT-LINE
               PERFORM PRINT-LINE-OUT
               GO TO CLOSE-FILES.
           MOVE DATE-IN TO DATE-OUT.
           MOVE TITLE-IN TO LOCATION-OUT.
           MOVE PERIOD-IN TO PERIOD-OUT.
       CLOSE-READER.
           CLOSE READER.
       HOUSEKEEPING.
           MOVE SPACES TO ACCUM-MAT, LINE-TOTAL-1, GRAND-1, SUBS-1,
                          DATA-LINE.
       TOTAL-UP-MATRIX.
           READ COST-MATRIX-FILE AT END
               GO TO WRITE-HEADINGS.
           IF  (COST-CAT < 1 OR > 12) OR (CC-POS1 < 1 OR > 6) THEN
               GO TO TOTAL-UP-MATRIX.
           MOVE 1 TO I, J.
           PERFORM ADD-AMOUNTS 2 TIMES.
           GO TO TOTAL-UP-MATRIX.
       ADD-AMOUNTS.
           IF AMOUNT-1 (I, COST-CAT, CC-POS1) = SPACES THEN
               MOVE ZERO TO AMOUNT (I, COST-CAT, CC-POS1).
           ADD AMTS (J) TO AMOUNT (I, COST-CAT, CC-POS1).
           ADD 1 TO I.
           ADD 2 TO J.
       WRITE-HEADINGS.
           PERFORM MOVE-SPACES.
           WRITE PRINTER-DATA BEFORE NEW-PAGE.
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          MOVE HEADING-1 TO PRINT-LINE.
          PERFORM PRINT-LINE-OUT.
          MOVE HEADING-2 TO PRINT-LINE.
          PERFORM PRINT-LINE-OUT.
          MOVE HEADING-3 TO PRINT-LINE.
          PERFORM PRINT-LINE-OUT.
          PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
          MOVE HEADING-4 TO PRINT-LINE.
          PERFORM PRINT-LINE-OUT.
          MOVE HEADING-5 TO PRINT-LINE.
          PERFORM PRINT-LINE-OUT.
          PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
          MOVE TITLES (1) TO TITLE-OUT.
          MOVE DATA-LINE TO PRINT-LINE.
          PERFORM PRINT-LINE-OUT.
          PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
      WRITE-SUBTITLE.
          MOVE TITLES (2) TO TITLE-OUT.
          MOVE DATA-LINE TO PRINT-LINE.
          PERFORM PRINT-LINE-OUT.
          PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
      WRITE-MANAGEMENT-SUPERVISION.
          MOVE 3 TO I.
          MOVE 4 TO J.
          PERFORM WRITE-CATEGORIES.
      WRITE-OPERATION-LABOR.
          MOVE 5 TO I.
          MOVE 6 TO J.
          PERFORM WRITE-CATEGORIES.
      WRITE-MAINTENANCE-LABOR.
          MOVE 7 TO I.
          PERFORM WRITE-CATEGORIES.
      WRITE-OTHER-LABOR.
          MOVE 8 TO I.
          PERFORM WRITE-CATEGORIES.
      WRITE-SUBTOTAL-T1.
          MOVE 9 TO I.
          MOVE 13 TO J.
          PERFORM WRITE-SUBTOTALS.
      WRITE-BENIFITS.
          MOVE 10 TO I.
          PERFORM WRITE-CATEGORIES.
      WRITE-RUNNING-SUBTOTAL-T2.
          MOVE 11 TO I.
          MOVE 12 TO J.
          PERFORM WRITE-RUNNING-SUBTOTALS.
      WRITE-SUBTITLE-ODC.
          PERFORM PRINT-LINE-OUT.
          MOVE 'OTHER DIRECT COST:' TO TITLE-OUT.
          MOVE DATA-LINE TO PRINT-LINE.
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    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
WRITE-MAINTENANCE.
    MOVE 7  TO I.
    MOVE 13 TO J.
    PERFORM WRITE-CATEGORIES.
WRITE-CHEMICALS.
    MOVE 14 TO I.
    PERFORM WRITE-CATEGORIES.
WRITE-POWER.
    MOVE 15 TO I.
    PERFORM WRITE-CATEGORIES.
WRITE-MISCELLANEOUS.
    MOVE 16 TO I.
    PERFORM WRITE-CATEGORIES.
WRITE-SUBTOTAL-T3.
    MOVE  9 TO I.
    PERFORM WRITE-SUBTOTALS.
WRITE-SECOND-PAGE.
    MOVE 'PAGE 2 OF 2 ' TO PAGE-OUT.
    PERFORM WRITE-HEADINGS.
    PERFORM PRINT-LINE-OUT.
WRITE-RUNNING-SUBTOTAL-T4.
    MOVE 17 TO I.
    MOVE 22 TO J.
    PERFORM WRITE-RUNNING-SUBTOTALS.
WRITE-DEPRICIATION.
    MOVE 18 TO I.
    MOVE 13 TO J.
    PERFORM WRITE-CATEGORIES.
WRITE-RUNNING-SUBTOTAL-T5.
    MOVE 19 TO I.
    PERFORM WRITE-RUNNING-SUBTOTALS.
WRITE-INTEREST.
    MOVE 20 TO I.
    PERFORM WRITE-CATEGORIES.
WRITE-TAXES.
    MOVE 21 TO I.
    PERFORM WRITE-CATEGORIES.
    PERFORM PRINT-LINE-OUT.
WRITE-GRAND-TOTAL-T6.
    MOVE 19 TO I.
    PERFORM WRITE-RUNNING-SUBTOTALS.
    GO TO CLOSE-FILES.
MOVE-SPACES.
    MOVE SPACES TO PRINT-LINE.
PRINT-LINE-OUT.
    WRITE PRINTER-DATA BEFORE 1.
WRITE-CATEGORIES.
    MOVE 1 TO PER.
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           ADD 1 TO CAT.
           PERFORM MOVE-AMOUNTS VARYING FUN FROM 1 BY 1 UNTIL FUN = 6.
           PERFORM TOTAL-AMOUNTS.
           MOVE TITLES (I) TO TITLE-OUT.
           MOVE PERIOD-IN TO PERIODS.
           MOVE DATA-LINE TO PRINT-LINE.
           PERFORM PRINT-LINE-OUT.
           MOVE SPACES TO DATA-LINE.
           MOVE 2 TO PER.
           PERFORM MOVE-AMOUNTS VARYING FUN FROM 1 BY 1 UNTIL FUN = 6.
           PERFORM TOTAL-AMOUNTS.
           MOVE TITLES (J) TO TITLE-OUT.
           MOVE 'YTD     ' TO PERIODS.
           MOVE DATA-LINE TO PRINT-LINE.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
           MOVE SPACES TO DATA-LINE.
       MOVE-AMOUNTS.
           IF AMOUNT-1 (PER, CAT, FUN) NOT = SPACES THEN
               PERFORM CHECK-LINE THRU ADD-TOTALS.
       CHECK-LINE.
           IF LINE-TOTAL-1 = SPACES THEN
               MOVE ZERO TO LINE-TOTAL.
       CHECK-SUB.
           IF SUB-TOTAL-1 (PER, FUN) = SPACES THEN
               MOVE ZERO TO SUB-TOTAL (PER, FUN).
       CHECK-GRAND.
           IF GRAND-TOTAL-1 (PER, FUN) = SPACES THEN
               MOVE ZERO TO GRAND-TOTAL (PER, FUN).
       ADD-TOTALS.
           MOVE AMOUNT (PER, CAT, FUN) TO AMOUNTS-OUT (FUN).
           ADD  AMOUNT (PER, CAT, FUN) TO LINE-TOTAL,
               SUB-TOTAL (PER, FUN), GRAND-TOTAL (PER, FUN).
       TOTAL-AMOUNTS.
           MOVE 6 TO FUN.
           PERFORM TOTAL-AMTS-FIX.
           IF AMOUNT-1 (PER, CAT, FUN) NOT = SPACES THEN
               MOVE 7 TO FUN
               PERFORM CHECK-LINE THRU CHECK-GRAND
               MOVE AMOUNT (PER, CAT, 6) TO AMOUNTS-OUT (7)
           ADD AMOUNT (PER, CAT, 6) TO LINE-TOTAL, SUB-TOTAL (PER, 7),
                   GRAND-TOTAL (PER, 7).
           MOVE 8 TO FUN.
           PERFORM TOTAL-AMTS-FIX.
           MOVE SPACES TO LINE-TOTAL-1.
       TOTAL-AMTS-FIX.
           IF LINE-TOTAL-1 NOT = SPACES THEN
               PERFORM CHECK-SUB THRU CHECK-GRAND
           MOVE LINE-TOTAL TO AMOUNTS-OUT (FUN)
           ADD LINE-TOTAL TO SUB-TOTAL (PER, FUN),
             GRAND-TOTAL (PER, FUN).
     WRITE-SUBTOTALS.
         MOVE 1 TO K.
         PERFORM MOVE-SUBTOT-TO-DATALINE VARYING PER
             FROM 1 BY 1 UNTIL PER = 9.
         MOVE TITLES (I) TO TITLE-OUT.
         MOVE PERIOD-IN TO PERIODS.
         MOVE DATA-LINE TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         MOVE 2 TO K.
         PERFORM MOVE-SUBTOT-TO-DATALINE VARYING PER
             FROM 1 BY 1 UNTIL PER = 9.
         MOVE TITLES (J) TO TITLE-OUT.
         MOVE 'YTD     ' TO PERIODS.
         MOVE DATA-LINE TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         MOVE SPACES TO DATA-LINE, SUBS-1.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
         PERFORM PRINT-LINE-OUT.
     WRITE-RUNNING-SUBTOTALS.
         MOVE 1 TO K.
         PERFORM MOVE-GRTOT-TO-DATALINE VARYING PER
             FROM 1 BY 1 UNTIL PER = 9.
         MOVE TITLES (I) TO TITLE-OUT.
         MOVE PERIOD-IN TO PERIODS.
         MOVE DATA-LINE TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         MOVE 2 TO K.
         PERFORM MOVE-GRTOT-TO-DATALINE VARYING PER
             FROM 1 BY 1 UNTIL PER = 9.
         MOVE TITLES (J) TO TITLE-OUT.
         MOVE 'YTD     ' TO PERIODS.
         MOVE DATA-LINE TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         MOVE SPACES TO DATA-LINE, SUBS-1.
         PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
         PERFORM PRINT-LINE-OUT.
     MOVE-SUBTOT-TO-DATALINE.
         IF SUB-TOTAL-1 (K, PER) NOT = SPACES THEN
         MOVE SUB-TOTAL (K, PER) TO AMOUNTS-OUT (PER).
     MOVE-GRTOT-TO-DATALINE.
         IF GRAND-TOTAL-1 (K, PER) NOT = SPACES THEN
         MOVE GRAND-TOTAL (K, PER) TO AMOUNTS-OUT (PER).
     CLOSE-FILES.
         CLOSE COST-MATRIX-FILE, PRINTER.
     E-O-J.
         STOP RUN.
     PGMNAME=WUASPLV2
.SYSIN    DD    *
  ID DIVISION.
  PROGRAM-ID. WUASPLV2
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN. JAN 1978.
  DATE-COMPILED.
  REMARKS.     THIS PROGRAM READS THE COST MATRIX FILE
               AND PRINTS THE LEVEL TWO WATER UTILITY
               REPORT CALLED 'COST COMPARISON'.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-MATRIX-FILE
          ASSIGN TO DA-3330-I-CMFILE
          ACCESS MODE IS SEQUENTIAL
          RECORD KEY IS CM-NUMBER.
      SELECT FINANCIAL-ACCT-TABFI
          ASSIGN TO DA-3330-I-FATABFI
          ACCESS MODE IS RANDOM
          NOMINAL KEY IS FA-NOMINAL
          RECORD KEY IS FA-NUMBER.
      SELECT FILE-SORT
          ASSIGN TO UT-3330-S-FILESORT
          ACCESS MODE IS SEQUENTIAL.
      SELECT SORTED-FILE
          ASSIGN TO UT-3330-S-SORTEDFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  CARD-IN
      RECORD CONTAINS 80 CHARACTERS
      LABEL RECORDS ARE OMITTED
      DATA RECORD IS DATE-CARD.
  01  DATE-CARD.
      05  DATE-IN.
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                 10  MO-IN    PIC X(3).
                 10  DAY-YR   PIC X(15).
             05  TITLE-IN     PIC X(24).
             05  FILLER             PIC X(8).
             05  FISCAL-YR          PIC X(24).
             05  FILLER             PIC X(4).
             05  NO-WKS             PIC X.
             05  RPT-PERIOD         PIC X.
        FD  COST-MATRIX-FILE
            RECORD CONTAINS 80 CHARACTERS
            BLOCK CONTAINS 5 RECORDS
            LABEL RECORDS ARE STANDARD
            DATA RECORD IS CM-REC.
        01  CM-REC.
            05  MATCH-NU    PIC X(4).
            05  CM-NUMBER.
                10  FA-NU   PIC X(10).
                10  CC-NU.
                    15  CC1       PIC X.
                    15  FILLER    PIC X(3).
                10  SA-NU   PIC XX.
            05  AMT-S        PIC S9(8)V99 OCCURS 6 TIMES.
*****
*     THE ABOVE AMOUNTS ARE AS FOLLOWS
*         (1) -- CURRENT COST AMOUNT
*         (2) -- PREVIOUS MONTH COST AMOUNT
*         (3) -- CURRENT COST AMOUNT YEAR TO DATE (YTD)
*         (4) -- BUDGET AMOUNT
*         (5) -- BUDGET AMOUNT YEAR TO DATE (YTD)
*         (6) -- PREVIOUS YEAR COST AMOUNT (PYC)
*****
        FD  FINANCIAL-ACCT-TABFI
            BLOCK CONTAINS 8 RECORDS
            RECORD CONTAINS 58 CHARACTERS
            LABEL RECORDS ARE STANDARD
            DATA RECORD IS FA-REC.
        01  FA-REC.
            05  FA-NUMBER          PIC X(10).
            05  FA-NAME-1          PIC X(40).
            05  FILLER             PIC X(8).
        SD  FILE-SORT
            RECORD CONTAINS 80 CHARACTERS
            DATA RECORD IS SORT-INPUT.
        01  SORT-INPUT.
            05  FILLER             PIC X(4).
            05  FIRST-10           PIC X(10).
            05  CC-NOS.
                10  CC-1            PIC X.
                10  CC-3            PIC X(3).
            05  SA-NOS             PIC XX.
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               05  FILLER        PIC X(30).
               05  BUDGET            PIC 9(8)V99.
               05  FILLER        PIC X(20).
           FD  SORTED-FILE
               RECORD CONTAINS 80 CHARACTERS
               BLOCK CONTAINS 5 RECORDS
               LABEL RECORDS ARE STANDARD
               DATA RECORD IS INPUT-REC.
           01  INPUT-REC.
               05  MATCH-NO          PIC X(4).
               05  FA-NO.
                   10  FA-NO-1       PIC X(2).
                   10  FA-NO-2       PIC X(8).
               05  CC-NO.
                   10  CC-NO-1       PIC X.
                   10  CC-NO-2       PIC XXX.
               05  SA-NO             PIC XX.
               05  AMTS.
                   10  AMT-1        PIC S9(8)V99.
                   10  AMT-2        PIC S9(8)V99.
                   10  AMT-3        PIC S9(8)V99.
                   10  AMT-4        PIC S9(8)V99.
                   10  AMT-5        PIC S9(8)V99.
                   10  AMT-6        PIC S9(8)V99.
          FD  PRINT-OUT
              RECORD CONTAINS 133 CHARACTERS
              LABEL RECORDS ARE OMITTED
              DATA RECORD IS PRINT-DATA.
          01  PRINT-DATA.
              05  FILLER             PIC X.
              05  PRINT-LINE         PIC X(132).
          WORKING-STORAGE SECTION.
          77  SCT-ONE            PIC 9(5) COMP VALUE  0.
          77  SCT-TWO            PIC 9(5) COMP VALUE  0.
          77  LINE-CT            PIC 9(4) COMP VALUE  0.
          77  PAGE-CT            PIC 9(4) COMP VALUE  1.
          77  MAX-LINE           PIC 99   COMP VALUE 56.
          77  SUB-T1             PIC X(6) VALUE SPACES.
          77  SUB-T2             PIC X(6) VALUE 'CONT-D'.
          77  FA-NOMINAL         PIC X(10) VALUE SPACES.
          77  BUD-ACCT               PIC X(10) VALUE SPACES.
          77  NEGS-IN            PIC X(2) VALUE '**'.
          77  YEAR-IN            PIC X(3) JUSTIFIED RIGHT.
          77  YEAR-OUT           PIC 9(4) COMP VALUE  0.
          77  MONTH              PIC 9(2) COMP VALUE  1.
          77  I                  PIC 99   COMP VALUE  0.
          77  J                  PIC 9    COMP VALUE 0.
          77  K                  PIC 99   COMP VALUE 0.
          77  CC-J               PIC 9   COMP VALUE 0.
          77  SA-K               PIC 99  COMP VALUE 0.
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       77  P-ERROR         PIC S9(8)V99 COMP VALUE +0.
       77  DEPRE-C         PIC S9(8)V99 COMP VALUE +0.
       77  DEPRE-P         PIC S9(8)V99 COMP VALUE +0.
       77  INT-C           PIC S9(8)V99 COMP VALUE +0.
       77  INT-P           PIC S9(8)V99 COMP VALUE +0.
       77  TAX-C           PIC S9(8)V99 COMP VALUE +0.
       77  TAX-P           PIC S9(8)V99 COMP VALUE +0.
       77  TEMP-1          PIC S9(8)V999 COMP VALUE +0.
       77  TEMP-2          PIC S9(8)V999 COMP VALUE +0.
       77  TEMP-3          PIC S9(8)V999 COMP VALUE +0.
       77  S-TOT-1         PIC S9(8)V99 COMP VALUE +0.
       77  S-TOT-2         PIC S9(8)V99 COMP VALUE +0.
       77  S-TOT-3         PIC S9(8)V99 COMP VALUE +0.
       77  S-TOT-4         PIC S9(8)V99 COMP VALUE +0.
       77  S-TOT-5         PIC S9(8)V99 COMP VALUE +0.
       77  S-TOT-6         PIC S9(8)V99 COMP VALUE +0.
       77  TOT-1           PIC S9(8)V99 COMP VALUE +0.
       77  TOT-2           PIC S9(8)V99 COMP VALUE +0.
       77  TOT-3           PIC S9(8)V99 COMP VALUE +0.
       77  TOT-4           PIC S9(8)V99 COMP VALUE +0.
       77  TOT-5           PIC S9(8)V99 COMP VALUE +0.
       77  TOT-6           PIC S9(8)V99 COMP VALUE +0.
       77  TOT-T3          PIC S9(8)V99 COMP VALUE +0.
       77  TOT-T4          PIC S9(8)V99 COMP VALUE +0.
       77  TOT-T5          PIC S9(8)V99 COMP VALUE +0.
       77  PRINT-REQ-FLAG  PIC X    VALUE '0'.
           88  FLAG-0               VALUE '0'.
           88  FLAG-1               VALUE '1'.
           88  FLAG-2               VALUE '2'.
       77  RPT-FLAG        PIC X    VALUE '1'.
           88  RPT-A                VALUE '1'.
           88  RPT-B                VALUE '2'.
       77  INT-FLAG        PIC X    VALUE '0'.
           88  FLAG-NO              VALUE '0'.
           88  FLAG-YES             VALUE '1'.
       01  YEAR-PTS.
           05  YR-A        PIC X(2).
           05  YR-B        PIC X.
       01  MONTH-NAMES.
           05  MO-A        PIC X(36)   VALUE        'JANFEBMARAPRMAYJUN
      -                                             'JULAUGSEPOCTNOVDEC'.
           05  MO-B REDEFINES MO-A.
               10  MO-NAME OCCURS 12 TIMES PIC X(3).
       01  NAME-LIST.
           05  LIST-A.
               10  NAMES-1A    PIC X(120)  VALUE                       '
      -                                'SOURCE OF SUPPLY
      -                                'PUMPING
      -                                'WATER TREATMENT
      -                               'TRANSMISSION AND DISTRIBUTION '.
```

```
         10  NAMES-2A    PIC X(120)  VALUE                            '
-                                  'CUSTOMER ACCOUNTS
-                                  'ADMINISTRATIVE AND GENERAL
-                                  'NON BUDGETED COSTS
-                                'TOTAL ACTUAL COSTS TO BUDGET   '.
     05  NAME-A REDEFINES LIST-A.
         10  NAME OCCURS 8 TIMES PIC X(30).
 01  LOWER-LIMITS.
     05  LIM-LA       PIC X(16) VALUE '6062646690920000'.
     05  LIM-LB REDEFINES LIM-LA.
         10  LO-LIM OCCURS 8 TIMES   PIC X(2).
 01  UPPER-LIMITS.
     05  LIM-UA       PIC X(16) VALUE '6163656790939999'.
     05  LIM-UB REDEFINES LIM-UA.
         10  HI-LIM OCCURS 8 TIMES   PIC X(2).
 01  COST-CENTERS.
     05  CC-LIST-1   PIC X(120)  VALUE                                '
-                                            'ACQUISITION
-                                            'TREATMENT
-                                            'DELIVERY
-                                            'SUPPORT SERVICES
-                                            'INTEREST
-                                          'TAXES                     '.
     05  CC-LIST-2 REDEFINES CC-LIST-1.
         10  CC-NAME OCCURS 6 TIMES  PIC X(20).
 01  CAT-LIST.
     05  CAT-A.
         10  C-CAT-1     PIC X(100)  VALUE                            '
-                                            'MANAGEMENT & SUPRV
-                                            'OPERATION LABOR
-                                            'MAINTENANCE LABOR
-                                            'OTHER LABOR
-                                          'BENEFITS                  '.
         10  C-CAT-2     PIC X(100)  VALUE                            '
-                                            'MAINTENANCE
-                                            'CHEMICALS
-                                            'POWER
-                                            'MISCELLANEOUS
-                                          'DEPRECIATION              '.
     05  CAT-B REDEFINES CAT-A.
         10  CAT-NAME OCCURS 10 TIMES    PIC X(20).
 01  HEADING-1.
     05  FILLER          PIC X(55) VALUE SPACES.
     05  FILLER          PIC X(22) VALUE 'COST COMPARISON REPORT'.
     05  FILLER          PIC X(55) VALUE SPACES.
 01  HEADING-2.
     05  FILLER          PIC X(12) VALUE 'LAST ENTRY: '.
     05  DATE-OUT        PIC X(18).
     05  FILLER          PIC X(34) VALUE SPACES.
     05  FILLER          PIC X(3)  VALUE 'FOR'.
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        05  FILLER          PIC X(55) VALUE SPACES.
        05  FILLER          PIC X(6)  VALUE 'PAGE: '.
        05  PAGE-OUT        PIC Z(4).
    01  HEADING-3.
        05  FILLER           PIC X(12)  VALUE 'RPT PERIOD: '.
        05  RPT-PD           PIC X(8).
        05  WKS-OUT          PIC X(8).
        05  FILLER          PIC X(26) VALUE SPACES.
        05  TITLE-OUT       PIC X(24).
        05  FILLER          PIC X(54) VALUE SPACES.
    01  HEADING-12.
        05  FILLER           PIC X(12)  VALUE 'YTD  START: '.
        05  FISC-YR          PIC X(24).
        05  FILLER          PIC X(24) VALUE SPACES.
        05  FILLER          PIC X(12) VALUE '( LEVEL II )'.
        05  FILLER          PIC X(60) VALUE SPACES.
*****
*
*           PART-A HEADINGS
*
*****
    01  HEADING-4.
        05  FILLER          PIC X(36) VALUE 'COMPARISON OF ACTUAL COS
-                                     'T TO BUDGET '.
        05  SUB-OUT         PIC X(6).
        05  FILLER          PIC X(90) VALUE SPACES.
    01  HEADING-5.
        05  FILLER          PIC X(17) VALUE   'BUDGET CATEGORIES'.
        05  FILLER          PIC X(42) VALUE SPACES.
        05  FILLER          PIC X(12) VALUE 'ACTUAL COSTS'.
        05  FILLER          PIC X(15) VALUE SPACES.
        05  FILLER          PIC X(14) VALUE 'BUDGETED COSTS'.
        05  FILLER          PIC X(10) VALUE SPACES.
        05  FILLER          PIC X(22) VALUE 'VARIANCE YR TO DATE   '.
    01  HEADING-6.
        05  FILLER          PIC X(14) VALUE   '  ******    **'.
        05  FILLER          PIC X(20) VALUE '********************'.
        05  FILLER          PIC X(19) VALUE SPACES.
        05  FILLER          PIC X(24) VALUE  '***********************
-                                     '*'.
        05  FILLER          PIC X(4)  VALUE SPACES.
        05  FILLER          PIC X(24) VALUE  '***********************
-                                     '*'.
        05  FILLER          PIC X(4)  VALUE SPACES.
        05  FILLER          PIC X(21) VALUE '*********************'.
        05  FILLER          PIC X(2)  VALUE SPACES.
    01  HEADING-7.
        05  FILLER          PIC X(2)  VALUE SPACES.
        05  FILLER          PIC X(16) VALUE 'ACCT #    ACCOUNT '.
        05  FILLER          PIC X(4)  VALUE 'NAME'.
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           05  FILLER              PIC X(29) VALUE SPACES.
           05  FILLER            PIC X(24) VALUE 'CURR PERIOD   YR TO DATE'.
           05  FILLER              PIC X(5)  VALUE SPACES.
           05  FILLER              PIC X(13) VALUE 'YR TO DATE    '.
           05  FILLER              PIC X(15) VALUE 'ANNUAL AMT      '.
           05  FILLER              PIC X(22) VALUE '    BALANCE  PERCENT    '.
       01  BUDGET-CAT.
           05  NAME-OUT            PIC X(30).
           05  FILLER              PIC X(102) VALUE SPACES.
       01  DATA-LINE-A.
           05  HEAD-STRIP-OUT      PIC X(52).
           05  COL-1A              PIC -----,---.--.
           05  COL-2A              PIC  --,---,---.--.
           05  FILLER              PIC X(1)  VALUE SPACES.
           05  COL-3A              PIC ---,---,---.--.
           05  COL-4A              PIC  --,---,---.--.
           05  FILLER              PIC X(1)  VALUE SPACES.
           05  COL-5A              PIC ---,---,---.--.
           05  FILLER              PIC X(2)  VALUE SPACES.
           05  COL-6A              PIC -(5).-.
           05  FILLER              PIC X(1)  VALUE SPACES.
           05  NEG-OUT             PIC X(2).
       01  HEAD-STRIP-1A.
           05  FILLER              PIC X(2)  VALUE SPACES.
           05  ACCT-NO             PIC X(9).
           05  FILLER              PIC X(1)  VALUE SPACES.
           05  ACCT-NAME           PIC X(40).
       01  HEAD-STRIP-2A.
           05  NAME-B              PIC X(30).
           05  FILLER              PIC X(22) VALUE SPACES.
      *****
      *
      *             PART-B HEADINGS
      *
      *****
       01  HEADING-8.
           05  FILLER              PIC X(40) VALUE 'COMPARISON OF ACTUAL COS
      -                                        'T TO PRIOR YEAR '.
           05  SUBS-OUT            PIC X(6).
           05  FILLER              PIC X(86) VALUE SPACES.
       01  HEADING-9.
           05  FILLER              PIC X(6)  VALUE SPACES.
           05  FILLER              PIC X(15) VALUE 'COST CATEGORIES'.
           05  FILLER              PIC X(28) VALUE SPACES.
           05  FILLER              PIC X(13) VALUE 'ACTUAL COSTS '.
           05  CURR-YR             PIC 9(4).
           05  FILLER              PIC X(10) VALUE SPACES.
           05  FILLER              PIC X(13) VALUE 'ACTUAL COSTS '.
           05  PREV-YR             PIC 9(4).
           05  FILLER              PIC X(14) VALUE SPACES.
           05  FILLER          PIC X(19) VALUE 'VARIANCE YR TO DATE'.
           05  FILLER          PIC X(6)  VALUE SPACES.
       01  HEADING-10.
           05  FILLER          PIC X(6)  VALUE SPACES.
           05  FILLER          PIC X(30) VALUE '************************
      -                                    '******'.
           05  FILLER          PIC X(13) VALUE SPACES.
           05  FILLER          PIC X(17) VALUE '*****************'.
           05  FILLER          PIC X(10) VALUE SPACES.
           05  FILLER          PIC X(17) VALUE '*****************'.
           05  FILLER          PIC X(11) VALUE SPACES.
           05  FILLER          PIC X(24) VALUE  '***********************
      -                                    '*'.
           05  FILLER          PIC X(4)  VALUE SPACES.
       01  HEADING-11.
           05  FILLER          PIC X(53) VALUE SPACES.
           05  FILLER          PIC X(10) VALUE 'YR TO DATE'.
           05  FILLER          PIC X(17) VALUE SPACES.
           05  FILLER          PIC X(10) VALUE 'YR TO DATE'.
           05  FILLER          PIC X(17) VALUE SPACES.
           05  FILLER          PIC X(19) VALUE ' BALANCE    PERCENT'.
           05  FILLER          PIC X(6)  VALUE SPACES.
       01  DATA-LINE-B.
           05  HEAD-OUT        PIC X(49).
           05  COL-1B          PIC ---,---,---.--.
           05  FILLER          PIC X(13) VALUE SPACES.
           05  COL-2B          PIC ---,---,---.--.
           05  FILLER          PIC X(11) VALUE SPACES.
           05  COL-5B          PIC ---,---,---.--.
           05  FILLER          PIC X(4)  VALUE SPACES.
           05  COL-6B          PIC -(5).--.
           05  FILLER          PIC X(4)  VALUE SPACES.
           05  NEGS-OUT        PIC X(2).
       01  HEAD-STRIP-1B.
           05  FILLER          PIC X(10) VALUE SPACES.
           05  C-CAT-OUT       PIC X(30).
           05  FILLER          PIC X(9)  VALUE SPACES.
       01  HEAD-STRIP-2B.
           05  FILLER          PIC X(6)  VALUE SPACES.
           05  FILLER          PIC X(14)   VALUE 'TOTAL COST OF '.
           05  CC-OUTS         PIC X(20).
           05  FILLER          PIC X(9)  VALUE SPACES.
       01  DATA-LINE-D.
           05  FILLER          PIC X(6)  VALUE SPACES.
           05  CC-OUT          PIC X(20).
           05  FILLER          PIC X(106) VALUE SPACES.
       01  DATA-LINE-E.
           05  FILLER          PIC X(8)  VALUE SPACES.
           05  C-CAT-SUB       PIC X(20).
           05  FILLER          PIC X(104) VALUE SPACES.
```

```
*****
*
*    START OF PROGRAM
*
*****
 PROCEDURE DIVISION.
 OPEN-FILES.
     OPEN     INPUT   CARD-IN, COST-MATRIX-FILE,
                      FINANCIAL-ACCT-TABFI.
              OUTPUT  PRINT-OUT.
 READ-TITLE-CARD.
     READ CARD-IN AT END GO TO TITLE-PARAGRAPH.
     GO TO READ-TITLE-CARD.
 TITLE-PARAGRAPH.
     PERFORM FILL-HEADINGS.
     PERFORM TOP-NEW-PAGE.
     PERFORM WRITE-PAGE-HEADING.
 SORT-RECORDS.
     OPEN     OUTPUT   SORTED-FILE.
     SORT FILE-SORT ON ASCENDING KEY FIRST-10
                       DESCENDING KEY BUDGET
     INPUT PROCEDURE READ-SORT-INPUT
           THRU READ-SORT-INPUT-END
     OUTPUT PROCEDURE WRITE-SORT-OUTPUT
            THRU WRITE-SORT-OUTPUT-END.
 REWIND-FILE.
     CLOSE    SORTED-FILE.
     OPEN     INPUT    SORTED-FILE.
 REPORT-PART-A.
     PERFORM WRITE-SUB-TITLE-A.
     MOVE '0' TO PRINT-REQ-FLAG.
     MOVE SPACES TO BUD-ACCT.
     PERFORM NEW-BUDGET-CAT THRU TEST-ACCT-LIMIT-END VARYING I FRO
-    M 1 BY 1 UNTIL I GREATER THAN 7.
     PERFORM WRITE-TOTALS.
     PERFORM WRITE-DEPREC-INT-TAXES.
     MOVE TOT-2 TO TOT-T4
     PERFORM WRITE-TOTALS.
     MOVE ZEROS TO DEPRE-C, DEPRE-P, INT-C, INT-P, TAX-C, TAX-P.
     MOVE ZEROS TO SCT-ONE, TEMP-1, TEMP-2.
     MOVE '0' TO INT-FLAG.
     MOVE '2' TO RPT-FLAG.
     MOVE SUB-T1 TO SUB-OUT, SUBS-OUT.
 DOUBLE-SORT.
     CLOSE    SORTED-FILE, COST-MATRIX-FILE.
     OPEN INPUT COST-MATRIX-FILE.
     OPEN     OUTPUT   SORTED-FILE.
     SORT FILE-SORT ON ASCENDING KEY
              CC-1
              SA-NOS
     INPUT PROCEDURE READ-SORT-INPUT
         THRU READ-SORT-INPUT-END
     OUTPUT PROCEDURE WRITE-SORT-OUTPUT
         THRU WRITE-SORT-OUTPUT-END.
 REPORT-PART-B.
     PERFORM TOP-NEW-PAGE.
     PERFORM WRITE-PAGE-HEADING.
     PERFORM WRITE-SUB-TITLE-B.
     PERFORM ZERO-SUB-TOTALS.
     PERFORM ZERO-TOTALS.
     PERFORM REWIND-FILE.
     PERFORM WRITE-COST-CENTER THRU COST-CENTER-END VARYING J FROM
             1 BY 1 UNTIL J GREATER THAN 4.
     PERFORM WRITE-OP-COSTS.
     PERFORM WRITE-INTEREST.
     PERFORM WRITE-TAXES.
     PERFORM WRITE-LAST-LINE.
     PERFORM TOP-NEW-PAGE.
     PERFORM WRITE-COUNTERS.
     GO TO CLOSE-FILES.
*****
*
*    END OF PROGRAM.
*
*****
*****
*
*        SUBROUTINES FOLLOW,
*            1. GENERAL SUBROUTINES
*            2. ROUTINES FOR PART-A
*            3. ROUTINES FOR PART-B
*
*****
*****
*
*            GENERAL SUBROUTINES
*
*****
 MOVE-SPACES.
     MOVE SPACES TO PRINT-LINE.
 PRINT-LINE-OUT.
     WRITE PRINT-DATA BEFORE 1.
     ADD 1 TO LINE-CT.
 SKIP-LINE.
     PERFORM MOVE-SPACES.
     PERFORM PRINT-LINE-OUT.
 PAGE-OVFLOW.
     IF LINE-CT NOT < MAX-LINE THEN
         PERFORM TOP-NEW-PAGE
         MOVE SUB-T2 TO SUB-OUT, SUBS-OUT
```

```
        PERFORM WRITE-PAGE-HEADING
        IF RPT-A THEN PERFORM WRITE-SUB-TITLE-A
                 ELSE PERFORM WRITE-SUB-TITLE-B.
ZERO-SUB-TOTALS.
    MOVE ZEROS TO S-TOT-1, S-TOT-2, S-TOT-3, S-TOT-4, S-TOT-5,
    S-TOT-6.
ZERO-TOTALS.
    MOVE ZEROS TO TOT-1, TOT-2, TOT-3, TOT-4, TOT-5, TOT-6.
TOP-NEW-PAGE.
    PERFORM MOVE-SPACES.
    WRITE PRINT-DATA BEFORE NEW-PAGE.
    MOVE PAGE-CT TO PAGE-OUT.
    MOVE 0 TO LINE-CT.
    ADD 1 TO PAGE-CT.
FILL-HEADINGS.
    MOVE DATE-IN TO DATE-OUT, YEAR-IN.
    MOVE FISCAL-YR TO FISC-YR.
    MOVE 'MONTHLY '      TO RPT-PD.
    IF RPT-PERIOD = '2' THEN MOVE 'QUARTER '     TO RPT-PD.
    IF RPT-PERIOD = '3' THEN MOVE 'HALF YR '     TO RPT-PD.
    IF RPT-PERIOD = '4' THEN MOVE 'ANNUAL  '     TO RPT-PD.
    MOVE SPACES TO WKS-OUT.
    IF NO-WKS = '1' MOVE '( 4 WKS)' TO WKS-OUT.
    IF NO-WKS = '2' MOVE '( 5 WKS)' TO WKS-OUT.
    IF NO-WKS = '3' MOVE '(13 WKS)' TO WKS-OUT.
    IF NO-WKS = '4' MOVE '(26 WKS)' TO WKS-OUT.
    IF NO-WKS = '5' MOVE '(52 WKS)' TO WKS-OUT.
    MOVE PAGE-CT TO PAGE-OUT.
    MOVE TITLE-IN TO TITLE-OUT.
    MOVE SUB-T1 TO SUB-OUT, SUBS-OUT.
    PERFORM FIND-YEAR.
    PERFORM FIND-MONTH VARYING I FROM 1 BY 1 UNTIL I GREATER
                        THAN 12.
WRITE-PAGE-HEADING.
    MOVE HEADING-1 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-2 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-3 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-12 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    PERFORM SKIP-LINE 2 TIMES.
FIND-YEAR.
    IF YEAR-IN IS NOT NUMERIC MOVE '078' TO YEAR-IN.
    MOVE YEAR-IN TO YEAR-OUT.
    IF YEAR-OUT > 900 THEN
        SUBTRACT 900 FROM YEAR-OUT.
    ADD 1900 YEAR-OUT GIVING CURR-YR.
    ADD 1899 YEAR-OUT GIVING PREV-YR.
```

```
 FIND-MONTH.
      IF MO-IN EQUAL MO-NAME (I) MOVE I TO MONTH.
 WRITE-DATA-LINE-A.
      MOVE DATA-LINE-A TO PRINT-LINE.
      PERFORM PRINT-LINE-OUT.
 WRITE-DATA-LINE-B.
      MOVE DATA-LINE-B TO PRINT-LINE.
      PERFORM PRINT-LINE-OUT.
 VARI-AND-PERCENT.
      MOVE SPACES TO NEG-OUT, NEGS-OUT.
      IF RPT-B AND TEMP-2 = 0 THEN MOVE 0 TO TEMP-1.
      SUBTRACT TEMP-1 FROM TEMP-2 GIVING TEMP-3.
      MOVE TEMP-3 TO COL-5A, COL-5B.
      MULTIPLY 100 BY TEMP-1.
      IF TEMP-2 > 0 DIVIDE TEMP-2 INTO TEMP-1 ELSE
                                 MOVE ZERO TO TEMP-1.
      IF TEMP-1 > 100    MOVE NEGS-IN TO NEG-OUT, NEGS-OUT.
      ADD .045 TO TEMP-1.
      MOVE TEMP-1 TO COL-6A, COL-6B.
*****
*
*              SUBROUTINES FOR PART-A
*
*****
 WRITE-SUB-TITLE-A.
      MOVE HEADING-4 TO PRINT-LINE.
      PERFORM PRINT-LINE-OUT.
      PERFORM SKIP-LINE.
      MOVE HEADING-5 TO PRINT-LINE.
      PERFORM PRINT-LINE-OUT.
      MOVE HEADING-6 TO PRINT-LINE.
      PERFORM PRINT-LINE-OUT.
      MOVE HEADING-7 TO PRINT-LINE.
      PERFORM PRINT-LINE-OUT.
      PERFORM SKIP-LINE.
 NEW-BUDGET-CAT.
      IF I EQUAL 7 THEN
                  MOVE '0' TO PRINT-REQ-FLAG
                  MOVE SPACES TO BUD-ACCT
                  PERFORM REWIND-FILE.
      PERFORM PAGE-OVFLOW.
      MOVE NAME (I) TO NAME-OUT.
      PERFORM SKIP-LINE.
      MOVE BUDGET-CAT TO PRINT-LINE.
      PERFORM PRINT-LINE-OUT.
 READ-SORTED-FILE.
      READ SORTED-FILE AT END GO TO READ-FILE-COMPLETE.
      IF AMT-4 > 0 THEN MOVE FA-NO TO BUD-ACCT.
      IF I = 7 THEN GO TO STEP-TWO.
      IF FA-NO-1 < LO-LIM (I) GO TO READ-SORTED-FILE.
```

```
           IF FA-NO EQUAL BUD-ACCT THEN GO TO NEXT-STEP.
           IF AMT-4 = 0 THEN GO TO TEST-ACCT-LIMIT.
           GO TO NEXT-STEP.
       STEP-TWO.
           MOVE '0' TO INT-FLAG.
           PERFORM DEPREC-INT-TAXES THRU TAXES-END.
           IF FLAG-YES THEN GO TO TEST-ACCT-LIMIT.
           IF FA-NO EQUAL BUD-ACCT THEN GO TO READ-SORTED-FILE.
           IF AMT-4 > 0    GO TO READ-SORTED-FILE.
           IF AMT-5 > 0    GO TO READ-SORTED-FILE.
           IF AMT-3 = 0    GO TO READ-SORTED-FILE.
           MOVE ZERO  TO COL-3A, COL-4A, COL-5A, COL-6A.
           MOVE SPACES TO NEG-OUT.
       NEXT-STEP.
           IF FLAG-0 THEN
               MOVE FA-NO TO FA-NOMINAL, ACCT-NO
               READ FINANCIAL-ACCT-TABFI INVALID KEY
                                    MOVE SPACES TO ACCT-NAME.
           IF FLAG-2 THEN
               READ FINANCIAL-ACCT-TABFI INVALID KEY
                                    MOVE SPACES TO ACCT-NAME.
           IF FLAG-0 OR FLAG-2 THEN
               MOVE FA-NAME-1 TO ACCT-NAME
               MOVE HEAD-STRIP-1A TO HEAD-STRIP-OUT.
           IF FA-NO NOT EQUAL FA-NOMINAL GO TO WRITE-DATA-LINE.
           ADD AMT-1 TO S-TOT-1.
           ADD AMT-3 TO S-TOT-2.
           ADD AMT-5 TO S-TOT-3.
           ADD AMT-4 TO S-TOT-4.
           MOVE '1' TO PRINT-REQ-FLAG.
           GO TO READ-SORTED-FILE.
       WRITE-DATA-LINE.
           IF I = 7 THEN
                   MOVE S-TOT-1 TO COL-1A
                   MOVE S-TOT-2 TO COL-2A
                   ADD S-TOT-1 TO TOT-1
                   ADD S-TOT-2 TO TOT-2
                   ELSE PERFORM ADD-SUB-TO-TOTALS.
           PERFORM WRITE-DATA-LINE-A.
           PERFORM PAGE-OVFLOW.
           ADD S-TOT-5 TO TOT-5.
           MOVE AMT-1 TO S-TOT-1.
           MOVE AMT-3 TO S-TOT-2.
           MOVE AMT-5 TO S-TOT-3.
           MOVE AMT-4 TO S-TOT-4.
           MOVE '2' TO PRINT-REQ-FLAG.
           MOVE FA-NO TO FA-NOMINAL, ACCT-NO.
       TEST-ACCT-LIMIT.
           IF FA-NO-1 NOT GREATER THAN HI-LIM (I)
                                  GO TO READ-SORTED-FILE.
```

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    IF FLAG-1 THEN PERFORM ADD-SUB-TO-TOTALS
                   PERFORM WRITE-DATA-LINE-A
                   PERFORM PAGE-OVFLOW
                   MOVE ZEROS TO S-TOT-1, S-TOT-2, S-TOT-3,
                                 S-TOT-4, S-TOT-5, S-TOT-6
                   MOVE '0' TO PRINT-REQ-FLAG.
    GO TO TEST-ACCT-LIMIT-END.
READ-FILE-COMPLETE.
    IF FLAG-2 THEN
        READ FINANCIAL-ACCT-TABFI INVALID KEY
                                     MOVE SPACES TO ACCT-NAME.
    IF FLAG-2 THEN
        MOVE FA-NAME-1 TO ACCT-NAME
        MOVE HEAD-STRIP-1A TO HEAD-STRIP-OUT.
    IF FLAG-0 THEN GO TO TEST-ACCT-LIMIT-END.
    IF I = 7 THEN
             MOVE S-TOT-1 TO COL-1A
             MOVE S-TOT-2 TO COL-2A
             ADD S-TOT-1 TO TOT-1
             ADD S-TOT-2 TO TOT-2
             ELSE PERFORM ADD-SUB-TO-TOTALS.
        PERFORM WRITE-DATA-LINE-A.
        MOVE SPACES TO FA-NOMINAL.
TEST-ACCT-LIMIT-END.
    IF I = 6 PERFORM WRITE-TOTALS.
WRITE-TOTALS.
    PERFORM SKIP-LINE.
    MOVE NAME (8) TO NAME-8.
    IF I = 6 THEN DIVIDE 12 INTO TOT-4 GIVING TOT-3,
        MULTIPLY TOT-3 BY MONTH GIVING TOT-3.
    IF I GREATER THAN 6 MOVE 'TOTAL' TO NAME-8.
    MOVE HEAD-STRIP-2A TO HEAD-STRIP-OUT.
    MOVE TOT-1 TO COL-1A.
    MOVE TOT-2 TO COL-2A, TEMP-1.
    MOVE TOT-3 TO COL-3A, TEMP-2.
    MOVE TOT-4 TO COL-4A.
    PERFORM VARI-AND-PERCENT.
    PERFORM WRITE-DATA-LINE-A.
ADD-SUB-TO-TOTALS.
    MULTIPLY MONTH BY S-TOT-4 GIVING TEMP-3.
    DIVIDE 12 INTO TEMP-3.
    ADD .005 TO TEMP-3.
    MOVE TEMP-3 TO S-TOT-3.
    ADD S-TOT-1 TO TOT-1.
    ADD S-TOT-2 TO TOT-2.
    ADD S-TOT-3 TO TOT-3.
    ADD S-TOT-4 TO TOT-4.
    IF ACCT-NO EQUAL '932-50    ' THEN
               COMPUTE P-ERROR = (MONTH * TOT-4 / 12) - TOT-3;
               ADD P-ERROR TO S-TOT-3.
    IF MONTH EQUAL 12 THEN MOVE S-TOT-4 TO S-TOT-3.
    MOVE S-TOT-1 TO COL-1A.
    MOVE S-TOT-2 TO COL-2A, TEMP-1.
    MOVE S-TOT-3 TO COL-3A. TEMP-2.
    MOVE S-TOT-4 TO COL-4A.
    PERFORM VARI-AND-PERCENT.
DEPREC-INT-TAXES.
    IF CC-NO-1 EQUAL '5' THEN
        ADD AMT-1 TO INT-C
        ADD AMT-3 TO INT-P
        MOVE '1' TO INT-FLAG
        GO TO TAXES-END.
    IF CC-NO-1 EQUAL '6' THEN
        ADD AMT-1 TO TAX-C
        ADD AMT-3 TO TAX-P
        MOVE '1' TO INT-FLAG
        GO TO TAXES-END.
    IF SA-NO EQUAL '10' THEN
        ADD AMT-1 TO DEPRE-C
        MOVE '1' TO INT-FLAG.
TAXES-END.
    EXIT.
WRITE-DEPREC-INT-TAXES.
    MOVE SPACES TO NEG-OUT.
    PERFORM SKIP-LINE.
    MOVE CAT-NAME (10) TO NAME-8.
    MOVE HEAD-STRIP-2A TO HEAD-STRIP-OUT.
    MULTIPLY MONTH BY DEPRE-C GIVING DEPRE-P.
    MOVE DEPRE-C TO COL-1A.
    MOVE DEPRE-P TO COL-2A.
    MOVE ZEROS TO COL-3A, COL-4A. COL-5A. COL-6A.
    PERFORM WRITE-DATA-LINE-A.
    PERFORM PAGE-OVFLOW.
    ADD DEPRE-C TO TOT-1.
    ADD DEPRE-P TO TOT-2.
    MOVE TOT-2 TO TOT-T3
    PERFORM WRITE-TOTALS.
    MOVE SPACES TO NEG-OUT.
    MOVE CC-NAME (5) TO NAME-8.
    MOVE HEAD-STRIP-2A TO HEAD-STRIP-OUT.
    MOVE INT-C TO COL-1A.
    MOVE INT-P TO COL-2A.
    MOVE ZEROS TO COL-3A, COL-4A. COL-5A. COL-6A.
    PERFORM WRITE-DATA-LINE-A.
    ADD INT-C TO TOT-1.
    ADD INT-P TO TOT-2.
    MOVE CC-NAME (6) TO NAME-8.
    MOVE HEAD-STRIP-2A TO HEAD-STRIP-OUT.
    MOVE TAX-C TO COL-1A.
    MOVE TAX-P TO COL-2A.
```

```
          PERFORM WRITE-DATA-LINE-A.
          ADD TAX-C TO TOT-1.
          ADD TAX-P TO TOT-2.
*****
*
*                 SUBROUTINES FOR PART-B
*
*****
 WRITE-SUB-TITLE-B.
         MOVE HEADING-8 TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         PERFORM SKIP-LINE.
         MOVE HEADING-9 TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         MOVE HEADING-10 TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         MOVE HEADING-11 TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         PERFORM SKIP-LINE 2 TIMES.
 WRITE-COST-CENTER.
         PERFORM PAGE-OVFLOW.
         MOVE CC-NAME (J) TO CC-OUT, CC-OUTS.
         MOVE DATA-LINE-D TO PRINT-LINE.
         PERFORM PRINT-LINE-OUT.
         IF J < 5 MOVE 'PAYROLL COSTS:       ' TO C-CAT-SUB,
                 MOVE DATA-LINE-E TO PRINT-LINE,
                 PERFORM PRINT-LINE-OUT.
         PERFORM DOUBLE-SORTED-FILE THRU DATA-LINE-EXIT    VARYING K
                 FROM 1 BY 1 UNTIL K GREATER THAN 10.
         PERFORM SKIP-LINE 3 TIMES.
 COST-CENTER-END.
         EXIT.
 DOUBLE-SORTED-FILE.
         MOVE '0' TO PRINT-REQ-FLAG.
 READ-DS-FILE.
         READ SORTED-FILE AT END GO TO DS-FILE-COMPLETE.
         MULTIPLY MONTH BY AMT-6.
         DIVIDE AMT-6 BY 12 GIVING AMT-6.
         IF FLAG-YES THEN PERFORM INT-AND-TAXES.
         IF FLAG-0 THEN
             MOVE CAT-NAME (K) TO C-CAT-OUT
             MOVE HEAD-STRIP-1B TO HEAD-OUT.
         MOVE CC-NO-1 TO CC-J.
         MOVE SA-NO TO SA-K.
         IF CC-J NOT EQUAL J OR SA-K NOT EQUAL K THEN
                                   GO TO WRITE-DATA-LINES.
         MOVE '1' TO PRINT-REQ-FLAG.
         ADD AMT-3 TO S-TOT-1.
         ADD AMT-6 TO S-TOT-2.
         GO TO READ-DS-FILE.
```

```
WRITE-DATA-LINES.
    ADD S-TOT-1 TO TOT-1. TOT-3, TEMP-1.
    ADD S-TOT-2 TO TOT-2. TOT-4, TEMP-2.
    MOVE S-TOT-1 TO COL-1B.
    MOVE S-TOT-2 TO COL-2B.
    PERFORM VARI-AND-PERCENT.
    MOVE AMT-3 TO S-TOT-1.
    MOVE AMT-6 TO S-TOT-2.
    IF K EQUAL 6 AND J LESS THAN 5 THEN
            MOVE 'OTHER DIRECT COSTS: ' TO C-CAT-SUB
            MOVE  DATA-LINE-E TO PRINT-LINE
            PERFORM PRINT-LINE-OUT.
    PERFORM WRITE-DATA-LINE-B.
    PERFORM WRITE-CC-TOTALS.
    PERFORM PAGE-OVFLOW.
    MOVE '0' TO PRINT-REQ-FLAG.
    IF K EQUAL 10 AND J EQUAL 4 THEN
            MOVE '1' TO INT-FLAG
            GO TO READ-DS-FILE.
DATA-LINE-EXIT.
    EXIT.
WRITE-CC-TOTALS.
    IF K EQUAL 10 AND J LESS THAN 5 THEN
            MOVE TOT-3 TO COL-1B; TEMP-1
            MOVE TOT-4 TO COL-2B; TEMP-2
            MOVE HEAD-STRIP-2B TO HEAD-OUT
            PERFORM VARI-AND-PERCENT
            PERFORM WRITE-DATA-LINE-B
            MOVE ZEROS TO TOT-3, TOT-4. TOT-5. TOT-6.
DS-FILE-COMPLETE.
    IF FLAG-1 THEN
        ADD S-TOT-1 TO TOT-1. TEMP-1
        ADD S-TOT-2 TO TOT-2. TEMP-2
        MOVE S-TOT-1 TO COL-1B
        MOVE S-TOT-2 TO COL-2B
        PERFORM VARI-AND-PERCENT
        PERFORM WRITE-DATA-LINE-B
        PERFORM WRITE-CC-TOTALS.
    GO TO DATA-LINE-EXIT.
WRITE-OP-COSTS.
            MOVE 'OPERATING            ' TO CC-OUTS.
            MOVE TOT-1 TO COL-1B. TEMP-1.
            MOVE TOT-2 TO COL-2B. TEMP-2.
            MOVE TOT-1 TO TOT-T5
            PERFORM VARI-AND-PERCENT.
            MOVE HEAD-STRIP-2B TO HEAD-OUT.
            PERFORM WRITE-DATA-LINE-B.
INT-AND-TAXES.
    IF CC-NO-1 EQUAL '5' THEN
            ADD AMT-3 TO INT-C
```

```
                ADD AMT-6 TO INT-P
                GO TO READ-DS-FILE.
        IF CC-NO-1 EQUAL '6' THEN
                ADD AMT-3 TO TAX-C
                ADD AMT-6 TO TAX-P.
        GO TO READ-DS-FILE.
    WRITE-INTEREST.
        PERFORM SKIP-LINE.
        ADD INT-C TO TOT-1.
        ADD INT-P TO TOT-2.
        MOVE INT-C TO COL-1B, TEMP-1.
        MOVE INT-P TO COL-2B, TEMP-2.
        PERFORM VARI-AND-PERCENT.
        MOVE CC-NAME (5) TO C-CAT-OUT.
        MOVE HEAD-STRIP-1B TO HEAD-OUT.
        PERFORM WRITE-DATA-LINE-B.
    WRITE-TAXES.
        ADD TAX-C TO TOT-1.
        ADD TAX-P TO TOT-2.
        MOVE TAX-C TO COL-1B, TEMP-1.
        MOVE TAX-P TO COL-2B, TEMP-2.
        PERFORM VARI-AND-PERCENT.
        MOVE CC-NAME (6) TO C-CAT-OUT.
        MOVE HEAD-STRIP-1B TO HEAD-OUT.
        PERFORM WRITE-DATA-LINE-B.
    WRITE-LAST-LINE.
        PERFORM SKIP-LINE.
        MOVE TOT-1 TO COL-1B, TEMP-1.
        MOVE TOT-2 TO COL-2B, TEMP-2.
        PERFORM VARI-AND-PERCENT.
        MOVE 'ALL ITEMS' TO CC-OUTS.
        MOVE HEAD-STRIP-2B TO HEAD-OUT.
        PERFORM WRITE-DATA-LINE-B.
        PERFORM TOP-NEW-PAGE.
        IF TOT-T3 NOT EQUAL TOT-T5 GO TO WRITE-ERROR.
        IF TOT-T4 NOT EQUAL TOT-1  GO TO WRITE-ERROR.
    WRITE-ERROR.
        PERFORM WRITE-PAGE-HEADING.
        PERFORM SKIP-LINE 5 TIMES.
        MOVE 'ERROR -- PART-A AND PART-B TOTALS DO NOT MATCH. '
                TO PRINT-LINE.
        PERFORM PRINT-LINE-OUT.
        MOVE ZERO TO COL-6B.
        MOVE TOT-T3 TO COL-1B.
        MOVE TOT-T5 TO COL-2B.
        SUBTRACT TOT-T5 FROM TOT-T3 GIVING COL-5B.
        MOVE 'PART-A, PART-B TOTALS & ERROR.'  TO C-CAT-OUT.
        MOVE HEAD-STRIP-1B TO HEAD-OUT.
        PERFORM WRITE-DATA-LINE-B.
        MOVE TOT-T4 TO COL-1B.
```

```
         MOVE TOT-1  TO COL-2B.
         SUBTRACT TOT-1 FROM TOT-T4 GIVING COL-5B.
         PERFORM WRITE-DATA-LINE-B.
         PERFORM TOP-NEW-PAGE.
         PERFORM WRITE-COUNTERS.
         GO TO CLOSE-FILES.
*****
*
*               FINI
*
*****
 READ-SORT-INPUT.
         READ COST-MATRIX-FILE AT END
              GO TO READ-SORT-INPUT-END.
         IF CC-NU EQUAL '4301' OR '4302' OR '4401'
                    OR '4321' OR '4322' OR '4421'
                            GO TO READ-SORT-INPUT.
         IF SA-NU GREATER THAN '12' THEN GO TO READ-SORT-INPUT.
         RELEASE SORT-INPUT FROM CM-REC.
         ADD 1 TO SCT-ONE.
         GO TO READ-SORT-INPUT.
 READ-SORT-INPUT-END.
         EXIT.
 WRITE-SORT-OUTPUT.
         RETURN FILE-SORT RECORD INTO INPUT-REC
              AT END GO TO WRITE-SORT-OUTPUT-END.
         WRITE INPUT-REC.
         ADD 1 TO SCT-TWO.
         GO TO WRITE-SORT-OUTPUT.
 WRITE-SORT-OUTPUT-END.
         EXIT.
 WRITE-COUNTERS.
         MOVE 'NUMBER OF ACCOUNTS SORTED' TO HEAD-OUT.
         MOVE SCT-ONE TO COL-1B.
         MOVE SCT-TWO TO COL-2B.
         MOVE DATA-LINE-B TO PRINT-LINE.
         MOVE ZEROS TO COL-5B, COL-6B.
         PERFORM PRINT-LINE-OUT.
         MOVE ZEROS TO SCT-ONE, SCT-TWO.
         MOVE ZEROS TO COL-1B, COL-2B, COL-5B.
CLOSE-FILES.
        CLOSE   CARD-IN, COST-MATRIX-FILE,
                FINANCIAL-ACCT-TABFI,
                SORTED-FILE, PRINT-OUT.
E-O-J.
        STOP RUN.
```

```
  PGMNAME=WUASPLV1
.SYSIN      DD    *
  IDENTIFICATION DIVISION.
  PROGRAM-ID. WUASPLV1.
  AUTHOR. ACT SYSTEMS, INC
         SUITE 200
         807 W MORSE BLVD
         WINTER PARK, FLA 32789.
  DATE-WRITTEN. 02/06/78.
  REMARKS.     THIS PROGRAM READS COST MATRIX FILE
               AND BUILDS THE LEVEL 1 REPORT.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
        ASSIGN TO UR-2540R-S-CARDIN
        ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
        ASSIGN TO UR-1403-S-PRINTOUT
        ACCESS MODE IS SEQUENTIAL.
      SELECT COST-MATRIX-FILE
        ASSIGN TO DA-3330-I-CMFILE
        ACCESS MODE IS SEQUENTIAL
        RECORD KEY IS CM-NUMBER.
 DATA DIVISION.
 FILE SECTION.
 FD  COST-MATRIX-FILE
     RECORD CONTAINS 80 CHARACTERS
     BLOCK CONTAINS 5 RECORDS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS INPUT-REC.
 01  INPUT-REC.
     05 MATCH-CODE                      PIC X(4).
     05  CM-NUMBER.
         10  FILLER          PIC X(10).
         10  COST-CNTR.
             15  POS1        PIC 9.
             15  FILLER      PIC XXX.
         10  COST-CAT        PIC 99.
     05 AMOUNTS.
        10 FIGS OCCURS 6 TIMES    PIC S9(8)V99.
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     05 DATE-IN                           PIC X(18).
     05 TITLE-IN                          PIC X(24).
     05 FILLER                            PIC X(38).
 01  NUMBER-CARD.
     05 MIL-GALS OCCURS 4 TIMES PIC 9(7)V999.
     05 ACTUAL-TO-BUDGET                  PIC 9(3)V99.
     05 FILLER                            PIC X(35).
*
*    ABOVE MIL-GALS IS AS FOLLOWS
*    (1) RPW (REVENUE PRODUCING WATER)
*    (2) TREATED WATER MONTH
*    (3) RPW YEAR TO DATE
*    (4) RPW PREVIOUS YEAR.
*
 FD  PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
 01  PRINT-LINE.
     05 FILLER                            PIC X.
     05 PRINT-DATA                        PIC X(132).
WORKING-STORAGE SECTION.
 77  MILLION-GAL              PIC S9(5)V999 VALUE ZERO.
 77  PREVIOUS-MILLION-GAL PIC S9(5)V999 VALUE ZERO.
 77  ACCUM-ACROSS             PIC S9(8)V99  VALUE ZERO.
 77  SAVE-AMT                 PIC S9(8)V99  VALUE ZERO.
 77  I                        PIC 99  VALUE 0.
 77  PAGE-CTR                 PIC 99 VALUE 0.
 77  J                        PIC 99 VALUE 0.
 77  K                  PIC 99 VALUE 0.
 77  PCT-CTR                  PIC V9999.
 77  FIN-PCT            PIC 999V9999.
 01  HEADING-1.
     05 FILLER          PIC X(50) VALUE SPACES.
     05 FILLER          PIC X(30) VALUE 'SUMMARY OF SYSTEMS INFORMATI
-                                   'ON'.
     05 FILLER          PIC X(52) VALUE SPACES.
 01  HEADING-2.
     05 FILLER          PIC X(6) VALUE 'DATE: '.
     05 DATE-OUT        PIC X(18) VALUE SPACES.
     05 FILLER          PIC X(40) VALUE SPACES.
     05 FILLER          PIC XXX VALUE 'FOR'.
     05 FILLER          PIC X(55) VALUE SPACES.
     05 FILLER          PIC X(6) VALUE 'PAGE: '.
     05  PAGE-NR              PIC Z(4).
 01  HEADING-3.
     05 FILLER          PIC X(53) VALUE SPACES.
     05 TITLE-OUT       PIC X(24) VALUE SPACES.
     05 FILLER          PIC X(55) VALUE SPACES.
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01  HEADING-4.
    05 FILLER       PIC X(26) VALUE '           CATEGORY       '.
    05 FILLER       PIC X(26) VALUE '       ACQUISITION   TREAT'.
    05 FILLER       PIC X(26) VALUE 'MENT    DELIVERY     SUPPO'.
    05 FILLER       PIC X(26) VALUE 'RT    INTEREST       TOTAL'.
    05 FILLER       PIC X(26) VALUE '       TAXES       TOTAL  '.
01  HEADING-5.
    05  FILLER          PIC X(60) VALUE SPACES.
    05  FILLER          PIC X(12) VALUE '( LEVEL  I )'.
    05  FILLER          PIC X(60) VALUE SPACES.
01  HEADING-6.
    05 FILLER       PIC X(26) VALUE '           ********       '.
    05 FILLER       PIC X(26) VALUE '       ***********   *****'.
    05 FILLER       PIC X(26) VALUE '****    ********     *****'.
    05 FILLER       PIC X(26) VALUE '**    ********       *****'.
    05 FILLER       PIC X(26) VALUE '       *****       *****  '.
01  DATA-LINE.
    05 FILLER       PIC X(10) VALUE SPACES.
    05 DESCRIPTION PIC X(20) VALUE SPACES.
    05 FILLER       PIC X(3) VALUE SPACES.
    05 POSIT OCCURS 8 TIMES.
       10 AMTS      PIC -(8).--.
       10 FILLER         PIC X.
    05 FILLER       PIC XXX VALUE SPACES.
01  PCT-LINE.
    05 FILLER       PIC X(10) VALUE SPACES.
    05 DESCRIPTION1 PIC X(20) VALUE SPACES.
    05 FILLER       PIC X(3) VALUE SPACES.
    05 PERCENT      PIC -(8).---  OCCURS 8 TIMES.
    05 FILLER       PIC XXX VALUE SPACES.
01  MATRIX.
    05 FUNCTIONS OCCURS 6 TIMES.
       10 SUB-FUNCTIONS OCCURS 5 TIMES.
          15 ACCT               PIC S9(8)V99.
01  TITLE-1.
    05 TITLE-ONE.
       10 FILLER PIC X(20) VALUE 'CURRENT PERIOD      '.
       10 FILLER PIC X(20) VALUE 'PREVIOUS PERIOD     '.
       10 FILLER PIC X(20) VALUE 'CURRENT PERIOD      '.
       10 FILLER PIC X(20) VALUE 'CURRENT YEAR (YTD)  '.
       10 FILLER PIC X(20) VALUE 'PREVIOUS YEAR (YTD) '.
    05 TITLE-TWO REDEFINES TITLE-ONE.
       10 TITLE OCCURS 5 TIMES PIC X(20).
01  TITLE-1-A.
    05 TITLE-ONE-A.
       10 FILLER PIC X(20) VALUE 'UNIT COST $/MG      '.
       10 FILLER PIC X(20) VALUE 'UNIT COST $/MG      '.
       10 FILLER PIC X(20) VALUE 'PREVIOUS YEAR $/MG  '.
       10 FILLER PIC X(20) VALUE 'UNIT COST $/MG      '.
       10 FILLER PIC X(20) VALUE 'UNIT COST $/MG      '.
    05 TITLE-TWO-A REDEFINES TITLE-ONE-A.
       10 TITLE-A OCCURS 5 TIMES PIC X(20).
01  TITLE-3.
    05 TITLE-THREE.
       10 FILLER PIC X(20) VALUE 'CURRENT PERIOD      '.
       10 FILLER PIC X(20) VALUE 'YEAR TO DATE        '.
    05 TITLE-FOUR REDEFINES TITLE-THREE.
       10 TITLE-B OCCURS 2 TIMES PIC X(20).
01  TITLE-3-A.
    05 TITLE-THREE-A.
       10 FILLER PIC X(20) VALUE 'TOTAL COST          '.
       10 FILLER PIC X(20) VALUE 'TOTAL COST          '.
    05 TITLE-FOUR-A REDEFINES TITLE-THREE-A.
       10 TITLE-X OCCURS 2 TIMES PIC X(20).
01  TITLE-5.
    05 TITLE-FIVE.
       10 FILLER PIC X(20) VALUE '% OF TOTAL          '.
       10 FILLER PIC X(20) VALUE '% OF PREVIOUS       '.
    05 TITLE-SIX REDEFINES TITLE-FIVE.
       10 TITLE-C OCCURS 2 TIMES PIC X(20).
01  TITLE-5-A.
    05 TITLE-FIVE-A.
       10 FILLER PIC X(20) VALUE 'YEAR TO DATE        '.
       10 FILLER PIC X(20) VALUE 'TOTAL (YTD)         '.
    05 TITLE-SIX-A REDEFINES TITLE-FIVE-A.
       10 TITLE-D OCCURS 2 TIMES PIC X(20).
PROCEDURE DIVISION.
OPEN-FILES.
    OPEN INPUT CARD-IN, COST-MATRIX-FILE
         OUTPUT PRINT-OUT.
HOUSEKEEPING.
    MOVE ZEROS TO MATRIX, PCT-CTR.
READ-TITLE-CARD.
    READ CARD-IN, AT END GO TO END-OF-JOB.
    MOVE DATE-IN TO DATE-OUT.
    MOVE TITLE-IN TO TITLE-OUT.
READ-PREVIOUS-DIVISOR-CARD.
    READ CARD-IN AT END GO TO END-OF-JOB.
    EXAMINE NUMBER-CARD REPLACING ALL ' ' BY '0'.
    MOVE MIL-GALS (1) TO PREVIOUS-MILLION-GAL.
READ-DIVISOR-CARD.
    READ CARD-IN, AT END GO TO END-OF-JOB.
    EXAMINE NUMBER-CARD REPLACING ALL ' ' BY '0'.
    MOVE MIL-GALS (1) TO MILLION-GAL.
WRITE-HEADINGS.
    ADD 1 TO PAGE-CTR.
    PERFORM MOVE-SPACES.
    MOVE PAGE-CTR TO PAGE-NR.
    WRITE PRINT-LINE BEFORE ADVANCING NEW-PAGE.
    MOVE HEADING-1 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-2 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-3 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-5 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-4 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-6 TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM SKIP-LINE 2 TIMES.
PROCESS-MATRIX.
    READ COST-MATRIX-FILE AT END GO TO PROCESS-TIME.
    IF (COST-CAT < 1 OR > 12) OR (POS1 < 1 OR > 6) THEN
        GO TO PROCESS-MATRIX.
    ADD FIGS (1) TO ACCT (POS1, 1).
    ADD FIGS (2) TO ACCT (POS1, 2).
    ADD FIGS (3) TO ACCT (POS1, 4).
    ADD FIGS (6) TO ACCT (POS1, 3).
    ADD FIGS (6) TO ACCT (POS1, 5).
    GO TO PROCESS-MATRIX.
PROCESS-TIME.
    PERFORM MOVE-AMOUNTS VARYING J FROM 1 BY 1 UNTIL J > 5.
    MOVE 1 TO J K.
    PERFORM MOVE-AMOUNTS-1 2 TIMES.
    PERFORM GET-PERCENTAGES.
    GO TO END-OF-JOB.
MOVE-AMOUNTS.
    IF J = 2 THEN
        MOVE PREVIOUS-MILLION-GAL TO MILLION-GAL.
    IF J = 4 THEN
        MOVE MIL-GALS (3) TO MILLION-GAL.
    PERFORM MOVE-AMOUNTS-A VARYING I FROM 1 BY 1 UNTIL I > 5.
    MOVE ACCUM-ACROSS TO AMTS OF POSIT (6).
    DIVIDE ACCT (6, J) BY MILLION-GAL GIVING AMTS OF POSIT (7).
    DIVIDE ACCT (6, J) BY MILLION-GAL GIVING SAVE-AMT.
    ADD ACCUM-ACROSS, SAVE-AMT GIVING AMTS OF POSIT (8).
    MOVE TITLE (J) TO DESCRIPTION.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE SPACES TO DATA-LINE.
    MOVE TITLE-A (J) TO DESCRIPTION.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    MOVE SPACES TO DATA-LINE.
    MOVE ZEROS TO ACCUM-ACROSS.
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MOVE-AMOUNTS-1.
    PERFORM MOVE-AMOUNTS-B VARYING I FROM 1 BY 1 UNTIL I > 5.
    MOVE ACCUM-ACROSS TO AMTS OF POSIT (6).
    MOVE ACCT (6, J) TO AMTS OF POSIT (7).
    ADD ACCT (6, J), ACCUM-ACROSS GIVING AMTS OF POSIT (8).
    MOVE TITLE-B (K) TO DESCRIPTION.
    PERFORM DATA-LINE-OUT.
    MOVE SPACES TO DATA-LINE.
    MOVE TITLE-X (K) TO DESCRIPTION.
    PERFORM DATA-LINE-OUT THRU PRINT-LINE-OUT.
    MOVE ZEROS TO ACCUM-ACROSS.
    MOVE SPACES TO DATA-LINE.
    ADD 1 TO K.
    ADD 3 TO J.
MOVE-AMOUNTS-A.
    DIVIDE ACCT (I, J) BY MILLION-GAL GIVING AMTS OF POSIT (I).
    DIVIDE ACCT (I, J) BY MILLION-GAL GIVING SAVE-AMT.
    ADD SAVE-AMT TO ACCUM-ACROSS.
MOVE-AMOUNTS-B.
    MOVE ACCT (I, J) TO AMTS OF POSIT (I).
    ADD ACCT (I, J) TO ACCUM-ACROSS.
GET-PERCENTAGES.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    MOVE 'BUDGET VARIANCE     ' TO DESCRIPTION.
    MOVE ACTUAL-TO-BUDGET TO AMTS OF POSIT (8).
    PERFORM DATA-LINE-OUT.
    MOVE SPACES TO DATA-LINE.
    MOVE 'YEAR TO DATE        ' TO DESCRIPTION.
    PERFORM DATA-LINE-OUT THRU PRINT-LINE-OUT.
    MOVE 'TREATED WATER       ' TO DESCRIPTION.
    MOVE MIL-GALS (2) TO AMTS OF POSIT (8).
    PERFORM DATA-LINE-OUT.
    MOVE SPACES TO DATA-LINE.
    MOVE 'CURRENT PERIOD      ' TO DESCRIPTION.
    PERFORM DATA-LINE-OUT THRU PRINT-LINE-OUT.
    MOVE 'REVENUE PRODUCING   ' TO DESCRIPTION.
    MOVE MIL-GALS (1) TO AMTS OF POSIT (8).
    PERFORM DATA-LINE-OUT.
    MOVE SPACES TO DATA-LINE.
    MOVE 'WATER CURRENT PERIOD' TO DESCRIPTION.
    PERFORM DATA-LINE-OUT THRU PRINT-LINE-OUT.
    MOVE 'REVENUE PRODUCING   ' TO DESCRIPTION.
    MOVE MIL-GALS (3) TO AMTS OF POSIT (8).
    PERFORM DATA-LINE-OUT.
    MOVE SPACES TO DATA-LINE.
    MOVE 'WATER (YTD)         ' TO DESCRIPTION.
    PERFORM DATA-LINE-OUT THRU PRINT-LINE-OUT.
    MOVE 'REVENUE PRODUCING   ' TO DESCRIPTION.
    MOVE MIL-GALS (4) TO AMTS OF POSIT (8).
    PERFORM DATA-LINE-OUT.
    MOVE SPACES TO DATA-LINE.
    MOVE 'WATER PREVIOUS YTD  ' TO DESCRIPTION.
    PERFORM DATA-LINE-OUT THRU PRINT-LINE-OUT.
    MOVE 1 TO K.
    MOVE 4 TO J.
    PERFORM PERCENT-ROUTINE 2 TIMES.
PERCENT-ROUTINE.
    MOVE ZEROS TO PCT-CTR.
    PERFORM FIND-PERCENT VARYING I FROM 1 BY 1 UNTIL I > 5.
    ADD ACCT (6, J) TO ACCUM-ACROSS.
    PERFORM FIND-PERCENT-A VARYING I FROM 1 BY 1 UNTIL I > 5.
    IF ACCUM-ACROSS > 0 THEN DIVIDE ACCT (6, J) BY ACCUM-ACROSS
        GIVING PCT-CTR ROUNDED ELSE MOVE ZEROS TO PCT-CTR.
    MULTIPLY PCT-CTR BY 100 GIVING PERCENT (7).
    IF ACCUM-ACROSS > 0 THEN
        MOVE 100 TO PERCENT (8).
    MOVE TITLE-C (K) TO DESCRIPTION1.
    MOVE PCT-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE SPACES TO PCT-LINE.
    MOVE TITLE-D (K) TO DESCRIPTION1.
    MOVE PCT-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    ADD 1 TO J K.
FIND-PERCENT.
    ADD ACCT (I, J) TO ACCUM-ACROSS.
FIND-PERCENT-A.
    IF ACCUM-ACROSS > 0 THEN DIVIDE ACCT (I, J) BY ACCUM-ACROSS
        GIVING PCT-CTR ROUNDED ELSE MOVE ZEROS TO PCT-CTR.
    MULTIPLY PCT-CTR BY 100 GIVING PERCENT (I).
DATA-LINE-OUT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
MOVE-SPACES.
    MOVE SPACES TO PRINT-DATA.
PRINT-LINE-OUT.
    WRITE PRINT-LINE BEFORE ADVANCING 1.
SKIP-LINE.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
END-OF-JOB.
    CLOSE CARD-IN, COST-MATRIX-FILE
           PRINT-OUT.
    STOP RUN.
```

```
      PGMNAME=WUASPWAR
 SYSIN     DD     *
  ID DIVISION.
  PROGRAM-ID. WUASPWAR.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN. JAN 1978.
  DATE-COMPILED.
  REMARKS.     THIS PROGRAM READS THE COST MATRIX FILE
               AND PRINTS THE WATER UTILITY REPORT
               CALLED 'WATER SUPPLY DATA ANALYSIS REPORT'.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-MATRIX-FILE
          ASSIGN TO DA-3330-I-CMFILE
          ACCESS MODE IS SEQUENTIAL
          RECORD KEY IS CM-NUMBER.
      SELECT FILE-SORT
          ASSIGN TO UT-3330-S-FILESORT
          ACCESS MODE IS SEQUENTIAL.
      SELECT SORTED-FILE
          ASSIGN TO UT-3330-S-SORTEDFI
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
 DATA DIVISION.
 FILE SECTION.
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS DATE-CARD.
 01  DATE-CARD.
     05  DATE-IN.
         10  MO-IN     PIC X(3).
         10  DAY-YR    PIC X(15).
     05  TITLE-IN      PIC X(24).
     05  FILLER              PIC X(8).
     05  FISCAL-YR           PIC X(24).
```

```
         05  FILLER              PIC X(4).
         05  NO-WKS              PIC X.
         05  RPT-PERIOD          PIC X.
     01  WATER-CARD.
         05  WU-NAME             PIC XX.
         05  SYSTEM              PIC 99.
         05  SERIES              PIC 99.
         05  PARALLEL            PIC 99.
         05  SER-PAR             PIC 99.
         05  WATER-SOLD          PIC S9(7)V999.
         05 ZONE-WATER.
             10  MIL-GAL OCCURS 6 TIMES PIC S9(7)V999.
     FD  COST-MATRIX-FILE
         RECORD CONTAINS 80 CHARACTERS
         BLOCK CONTAINS 5 RECORDS
         LABEL RECORDS ARE STANDARD
         DATA RECORD IS CM-REC.
     01  CM-REC.
         05  MATCH-NO     PIC X(4).
         05  CM-NUMBER.
             10  FA-NO    PIC X(10).
             10  CC-NO    PIC X(4).
             10  SA-NO    PIC XX.
         05  AMT-S       PIC S9(8)V99 OCCURS 6 TIMES.
*****
*        THE ABOVE AMOUNTS ARE AS FOLLOWS
*            (1) -- CURRENT COST AMOUNT
*            (2) -- PREVIOUS MONTH COST AMOUNT
*            (3) -- CURRENT COST AMOUNT YEAR TO DATE (YTD)
*            (4) -- BUDGET AMOUNT
*            (5) -- BUDGET AMOUNT YEAR TO DATE (YTD)
*            (6) -- PREVIOUS YEAR COST AMOUNT (PYC)
*****
     SD  FILE-SORT
         RECORD CONTAINS 80 CHARACTERS
         DATA RECORD IS SORT-INPUT.
     01  SORT-INPUT.
         05  FILLER             PIC X(4).
         05  FIRST-10           PIC X(10).
         05  CC-NOS             PIC X(4).
         05  SA-NOS             PIC XX.
         05  FILLER         PIC X(60).
     FD  SORTED-FILE
         BLOCK CONTAINS 5 RECORDS
         RECORD CONTAINS 80 CHARACTERS
         LABEL RECORDS ARE STANDARD
         DATA RECORD IS INPUT-REC.
     01  INPUT-REC.
         05  MATCH-NO           PIC X(4).
         05  FA-NO.
```

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          10  FA-NO-1       PIC X(2).
          10  FA-NO-2       PIC X(8).
      05  CC-NO.
          10  CC-NO-1       PIC X.
          10  CC-NO-2       PIC X.
          10  CC-NO-3       PIC X.
          10  CC-NO-4       PIC X.
      05  SA-NO             PIC XX.
      05  AMTS.
          10  AMT-1        PIC S9(8)V99.
          10  AMT-2        PIC S9(8)V99.
          10  AMT-3        PIC S9(8)V99.
          10  AMT-4        PIC S9(8)V99.
          10  AMT-5        PIC S9(8)V99.
          10  AMT-6        PIC S9(8)V99.
 FD  PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-DATA.
 01  PRINT-DATA.
     05  FILLER             PIC X.
     05  PRINT-LINE         PIC X(132).
 WORKING-STORAGE SECTION.
 77  LINE-CT            PIC 9(4) COMP VALUE  0.
 77  PAGE-CT            PIC 9(4) COMP VALUE  1.
 77  MAX-LINE           PIC 99   COMP VALUE 57.
 77  I                  PIC 99   COMP VALUE  0.
 77  J                  PIC 99   COMP VALUE 0.
 77  K                  PIC 99   COMP VALUE 0.
 77  L                  PIC 99   COMP VALUE  0.
 77  N                  PIC 99   COMP VALUE  1.
 77  ZONES              PIC 99   COMP VALUE  1.
 77  DOLS              PIC S9(8)V99        VALUE +0.
 77  TEMP-1            PIC S9(8)V999       VALUE +0.
 77  TEMP-2            PIC S9(8)V999       VALUE +0.
 77  RPT-FLAG                PIC X  VALUE '1'.
     88  RPT-A                      VALUE '1'.
     88  RPT-B                      VALUE '2'.
 01  COST-CENTERS.
     05  CC-LIST.
         10  CC-LIST-1     PIC X(120)  VALUE                           '
-                                            'ACQUISITION
-                                            'TREATMENT
-                                            '  TRANSMISSION
-                                            '  DISTRIBUTION
-                                            '  STORAGE
                                           '  PUMPING                 '.
        10  CC-LIST-2     PIC X(120)  VALUE                            '
-                                            'SUPPORT SERVICES
-                                            'INTEREST
-                                 'TAXES
-                                 'TOTAL
-                                 '  DELIVERY
-                               '               '.
    05  CC-NAMES REDEFINES CC-LIST.
        10  CC-NAME OCCURS 12 TIMES  PIC X(20).
 01  MATRIX.
    05  FUNCTIONS OCCURS 10 TIMES.
        10  SUB-FUNCTIONS OCCURS 7 TIMES.
            15  POSIT     PIC S9(8)V99.
 01  SUB-SUB-TOTAL.
    05  SS-TOT            PIC S9(8)V99      OCCURS 7 TIMES.
 01  SUB-TOTAL.
    05  S-TOT             PIC S9(6)V99      OCCURS 7 TIMES.
 01  COL-TOTAL.
    05  C-TOT             PIC S9(6)V99      OCCURS 7 TIMES.
*****
*
*         HEADINGS
*
*****
 01  HEADING-1.
    05  FILLER          PIC X(56) VALUE SPACES.
    05  FILLER          PIC X(20) VALUE 'COST ANALYSIS REPORT'.
    05  FILLER          PIC X(56) VALUE SPACES.
 01  HEADING-2.
    05  FILLER          PIC X(12) VALUE 'LAST ENTRY: '.
    05  DATE-OUT        PIC X(18).
    05  FILLER          PIC X(34) VALUE SPACES.
    05  FILLER          PIC X(3)  VALUE 'FOR'.
    05  FILLER          PIC X(55) VALUE SPACES.
    05  FILLER          PIC X(6)  VALUE 'PAGE: '.
    05  PAGE-OUT        PIC Z(4).
 01  HEADING-3.
    05  FILLER           PIC X(12)  VALUE 'RPT PERIOD: '.
    05  RPT-PD           PIC X(8).
    05  WKS-OUT          PIC X(8).
    05  FILLER          PIC X(26) VALUE SPACES.
    05  FILLER          PIC X(24).
    05  FILLER          PIC X(54) VALUE SPACES.
 01  HEADING-6.
    05  FILLER           PIC X(12)  VALUE 'YTD  START: '.
    05  FISC-YR          PIC X(24).
    05  FILLER      PIC X(96).
 01  HEADING-4.
    05  FILLER           PIC X(20)  VALUE 'ITEM DESCRIPTION    '.
    05  FILLER           PIC X(12)  VALUE SPACES.
    05  FILLER           PIC X(14)  VALUE '        ZONE  1'.
    05  FILLER           PIC X(14)  VALUE '        ZONE  2'.
    05  FILLER           PIC X(14)  VALUE '        ZONE  3'.
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          05  Z-4                     PIC X(14).
          05  Z-5                     PIC X(14).
          05  FILLER                  PIC X(4)   VALUE SPACES.
          05  Z-OUT                   PIC X(10).
          05  FILLER                  PIC X(16)  VALUE '          TOTALS  '.
      01  HEADING-5.
          05  FILLER                  PIC X(15)  VALUE '***************'.
          05  FILLER                  PIC X(15)  VALUE '**********     '.
          05  FILLER                  PIC X(2)   VALUE SPACES.
          05  FILLER                  PIC X(14)  VALUE '    **********'.
          05  FILLER                  PIC X(14)  VALUE '    **********'.
          05  FILLER                  PIC X(14)  VALUE '    **********'.
          05  FILLER                  PIC X(14)  VALUE '    **********'.
          05  FILLER                  PIC X(14)  VALUE '    **********'.
          05  FILLER                  PIC X(14)  VALUE '    **********'.
          05  FILLER                  PIC X(16)  VALUE '   **********   '.
      01  DATA-LINE-A.
          05  LTR-OUT                 PIC X(2).
          05  NAME-OUT                PIC X(30).
          05  COLS                    PIC ---,---,---.-- OCCURS 7 TIMES.
          05  FILLER                  PIC X(2)   VALUE SPACES.
      01  DATA-LINE-B.
          05  FILLER                  PIC X(31)  VALUE SPACES.
          05  PERCENT OCCURS 7 TIMES.
              10  PERC                PIC BBB-(9).-.
          05  FILLER                  PIC X(3)   VALUE SPACES.
      01  DATA-LINE-C.
          05  FILLER                  PIC X(34)  VALUE SPACES.
          05  FILLER                  PIC X(14)  VALUE '           %  '.
          05  FILLER                  PIC X(14)  VALUE '           %  '.
          05  FILLER                  PIC X(14)  VALUE '           %  '.
          05  FILLER                  PIC X(14)  VALUE '              '.
          05  FILLER                  PIC X(14)  VALUE '              '.
          05  FILLER                  PIC X(14)  VALUE '              '.
          05  FILLER                  PIC X(14)  VALUE '           %  '.
*****
*
*    START OF PROGRAM
*
*****
 PROCEDURE DIVISION.
 OPEN-FILES.
     OPEN    INPUT   CARD-IN, COST-MATRIX-FILE,
             OUTPUT  PRINT-OUT.
 READ-TITLE-CARD.
     READ CARD-IN AT END GO TO TITLE-PARAGRAPH.
     PERFORM FILL-HEADINGS.
 READ-WATER-CARD.
     READ CARD-IN AT END GO TO TITLE-PARAGRAPH.
 TITLE-PARAGRAPH.
```

```
      PERFORM TOP-NEW-PAGE.
      PERFORM WRITE-PAGE-HEADING.
 HOUSEKEEPING.
      MOVE ZEROS TO MATRIX.
      PERFORM ZERO-SUB-TOTALS THRU ZERO-TOTALS.
 SORT-RECORDS.
      OPEN    OUTPUT   SORTED-FILE.
      SORT FILE-SORT ON ASCENDING KEY CC-NOS
      INPUT PROCEDURE READ-SORT-INPUT
            THRU READ-SORT-INPUT-END
      OUTPUT PROCEDURE WRITE-SORT-OUTPUT
             THRU WRITE-SORT-OUTPUT-END.
      PERFORM REWIND-FILE.
 TEST-CONFIGURATION.
      IF SYSTEM =  0 THEN GO TO WRITE-MATRIX.
      IF SYSTEM =  1 THEN GO TO SERIES-CONFIG.
      IF SYSTEM =  2 THEN GO TO  PARA-CONFIG.
      IF SYSTEM =  3 THEN GO TO  PAR-SER-CONFIG.
      IF SYSTEM =  4 THEN GO TO  SER-PAR-SER-CONFIG.
      GO TO WRITE-MATRIX.
 SERIES-CONFIG.
      MOVE ZERO TO L.
      MOVE  SERIES  TO ZONES.
      GO TO READ-SORTED-FILE.
 PARA-CONFIG.
      MOVE ZERO TO L.
      MOVE PARALLEL TO ZONES.
 READ-SORTED-FILE.
      READ SORTED-FILE AT END GO TO END-SORTED-FILE.
      IF PAGE-CT EQUAL 2 THEN MOVE AMT-1 TO DOLS
                         ELSE MOVE AMT-3 TO DOLS.
      IF DOLS  = 0 GO TO READ-SORTED-FILE.
      MOVE CC-NO-1 TO I.
      IF CC-NO-1 NOT EQUAL '3' THEN GO TO STEP-2.
      MOVE CC-NO-2 TO L.
      SUBTRACT 1 FROM L.
 STEP-2.
      ADD L TO I.
      IF I > 10 THEN MOVE 10 TO I.
      MOVE CC-NO-4 TO J.
      IF CC-NO-1 NOT EQUAL '3' THEN ADD DOLS TO POSIT (I, 6)
                                    ADD DOLS TO POSIT (10, 6).
      IF WU-NAME EQUAL 'KE' PERFORM   KENTON-CO-EXCEPTIONS
                            THRU KENTON-END.
      IF WU-NAME EQUAL 'CO' PERFORM   COVINGTON-EXCEPTIONS
                            THRU COVINGTON-END.
      IF CC-NO-1 = '3' THEN ADD DOLS  TO POSIT (I, J).
      IF CC-NO-1 = '3' THEN ADD DOLS  TO POSIT (10, J).
      ADD DOLS  TO POSIT (I, 7).
      ADD DOLS  TO POSIT (10, 7).
```

```
     GO TO READ-SORTED-FILE.
 END-SORTED-FILE.
     ADD DOLS  TO POSIT (10, 7).
     ADD DOLS  TO POSIT (9, 7).
     MOVE 3 TO I.
     PERFORM CALCULATE-COSTS THRU END-COSTS.
     IF WU-NAME EQUAL 'CO' THEN GO TO STEP-3.
     MOVE 6 TO I.
     PERFORM CALCULATE-COSTS THRU END-COSTS.
 STEP-3.
     MOVE 0 TO J.
     PERFORM ADD-DEL-COSTS 5 TIMES.
     PERFORM ZERO-SUB-TOTALS THRU ZERO-TOTALS.
     GO TO WRITE-MATRIX.
 ADD-DEL-COSTS.
     ADD 1 TO J.
     MOVE POSIT (3, J) TO POSIT (10, J).
     ADD POSIT (4, J), POSIT (5, J), POSIT (6, J)
                             TO POSIT (10, J).
 KENTON-CO-EXCEPTIONS.
     IF CC-NO-2 EQUAL '3' THEN GO TO STORAGE-CHANGES.
     IF CC-NO-2 EQUAL '4' THEN GO TO PUMPING-CHANGES.
     GO TO KENTON-END.
 STORAGE-CHANGES.
     IF CC-NO-4 = '5' OR '6' THEN MOVE 3 TO J
                                  ELSE MOVE 2 TO J.
     IF CC-NO-4 = '1' THEN MOVE 1 TO J.
     GO TO KENTON-END.
 PUMPING-CHANGES.
     IF CC-NO-4 > '4' THEN MOVE 3 TO J
                      ELSE MOVE 2 TO J.
     IF CC-NO-4 = '1' THEN MOVE 1 TO J.
 KENTON-END.
     IF J > 7 THEN MOVE 7 TO J.
 COVINGTON-EXCEPTIONS.
     IF CC-NO-2 EQUAL '4' THEN GO TO COV-PUMP-CHANGES.
     GO TO COVINGTON-END.
 COV-PUMP-CHANGES.
     IF CC-NO-4 > '2' THEN SUBTRACT 1 FROM J.
     IF CC-NO-4 = '2' THEN MOVE 5 TO J.
 COVINGTON-END.
     IF J > 7 THEN MOVE 7 TO J.
 CALCULATE-COSTS.
     IF WATER-SOLD = 0 THEN GO TO END-COSTS.
     MOVE POSIT (I, 1) TO S-TOT (1).
     IF SYSTEM EQUAL 2 THEN MOVE ZERO TO POSIT (I, 1)
                       GO TO CALC-PARA-COSTS.
     COMPUTE POSIT (I, 1) = POSIT (I, 1) * MIL-GAL (1)
                            / WATER-SOLD.
     MOVE POSIT (I, 2) TO S-TOT (2).
```

```
           COMPUTE POSIT (I, 2) = (POSIT (I, 2) + S-TOT (1)
                  - POSIT (I, 1)) * MIL-GAL (2) / (WATER-SOLD
                  - MIL-GAL (1)).
           SUBTRACT POSIT (I, 1), POSIT (I, 2) FROM POSIT (I, 7)
                                  GIVING POSIT (I, 3).
           GO TO END-COSTS.
       CALC-PARA-COSTS.
           COMPUTE S-TOT (N) = S-TOT (1) * MIL-GAL (N) / WATER-SOLD.
           ADD S-TOT (N) TO POSIT (I, N).
           ADD 1 TO N.
           IF N NOT GREATER THAN PARALLEL GO TO CALC-PARA-COSTS.
           MOVE 1 TO N.
           SUBTRACT POSIT (I, 2), POSIT (I, 3), POSIT (I, 4),
                  POSIT (I, 5)  FROM POSIT (I, 7) GIVING POSIT (I, 1).
       END-COSTS.
           EXIT.
       NEXT-PAGE.
           IF PAGE-CT > 2 THEN GO TO CLOSE-FILES.
           PERFORM READ-WATER-CARD THRU HOUSEKEEPING.
           MOVE '1' TO RPT-FLAG.
           PERFORM REWIND-FILE.
           GO TO TEST-CONFIGURATION.
       PAR-SER-CONFIG.
           GO TO WRITE-MATRIX.
       SER-PAR-SER-CONFIG.
           GO TO WRITE-MATRIX.
       WRITE-MATRIX.
           PERFORM WRITE-MATRIX-LINE VARYING I FROM 1 BY 1 UNTIL
                                             I GREATER THAN 10.
           IF RPT-B THEN GO TO NEXT-PAGE
                  ELSE PERFORM SKIP-LINE 2 TIMES.
           GO TO WRITE-COSTS-BY-ZONE.
       WRITE-MATRIX-LINE.
           MOVE CC-NAME (I) TO NAME-OUT.
           PERFORM MATRIX-COL VARYING J FROM 1 BY 1 UNTIL
                                       J GREATER THAN 7.
           PERFORM WRITE-DATA-LINE-A.
           IF RPT-B    THEN
                       MOVE POSIT (I, 7) TO TEMP-1
                       MOVE POSIT (10, 7) TO TEMP-2
                       MOVE 7 TO J
                       PERFORM VARI-AND-PERCENT
                       PERFORM WRITE-DATA-LINE-C
                       PERFORM WRITE-DATA-LINE-B
                       PERFORM WRITE-SUB-TOTALS THRU ST-END.
           IF I = 2 THEN MOVE CC-NAME (11) TO PRINT-LINE
                         PERFORM PRINT-LINE-OUT.
       MATRIX-COL.
           MOVE POSIT  (I, J) TO COLS (J).
           IF RPT-B PERFORM PERCENT-LINE.
```

```
 PERCENT-LINE.
     MOVE C-TOT (J)      TO TEMP-2.
     MOVE POSIT (I, J) TO TEMP-1.
     PERFORM VARI-AND-PERCENT.
 WRITE-SUB-TOTALS.
     IF I < 6 OR I = 7 THEN GO TO ST-END.
     IF I > 8 THEN GO TO ST-END.
     MOVE 'SUB TOTAL    ' TO NAME-OUT.
     MOVE 0 TO J.
     PERFORM LOAD-SUB-TOTALS 7 TIMES.
     PERFORM WRITE-DATA-LINE-A THRU WRITE-DATA-LINE-B.
 ST-END.
     EXIT.
 LOAD-SUB-TOTALS.
     ADD 1 TO J.
     MOVE  C-TOT (J) TO TEMP-2.
     IF I = 6 THEN MOVE SS-TOT (J) TO COLS (J), TEMP-1
               ELSE MOVE S-TOT (J) TO COLS (J), TEMP-1.
     PERFORM VARI-AND-PERCENT.
 WRITE-COSTS-BY-ZONE.
     PERFORM ZERO-SUB-TOTALS THRU ZERO-TOTALS.
     MOVE ZEROS TO TEMP-1, TEMP-2.
     MOVE 'TOTAL COSTS BY ZONE:' TO PRINT-LINE.
     PERFORM PRINT-LINE-OUT.
     MOVE 'DIRECT' TO NAME-OUT.
     MOVE 0 TO J.
     PERFORM DIRECT-COSTS 5 TIMES.
     MOVE ZERO TO COLS (6).
     MOVE C-TOT (7) TO COLS (7).
     PERFORM WRITE-DATA-LINE-A.
     MOVE 'INDIRECT' TO NAME-OUT.
     MOVE 0 TO J.
     ADD POSIT (1, 7), POSIT (2, 7), POSIT (7, 7), POSIT (8, 7),
                       POSIT (9, 7) TO TEMP-1.
     MOVE TEMP-1 TO COLS (7).
     ADD TEMP-1 TO C-TOT (7).
     PERFORM INDIRECT-COSTS 5 TIMES.
     PERFORM WRITE-DATA-LINE-A.
     MOVE 'TOTAL' TO NAME-OUT.
     MOVE 0 TO J.
     PERFORM LOAD-TOTALS 7 TIMES.
     PERFORM WRITE-DATA-LINE-A.
     MOVE ZERO TO K.
     PERFORM SKIP-LINE 2 TIMES.
     GO TO WRITE-WATER-PRODUCED.
 DIRECT-COSTS.
     ADD 1 TO J.
     MOVE POSIT (10, J) TO COLS (J).
     ADD POSIT (10, J) TO C-TOT (J).
     ADD POSIT (10, J) TO C-TOT (7).
```

```
INDIRECT-COSTS.
    ADD 1 TO J.
    MOVE POSIT (10, 6) TO TEMP-1.
    MULTIPLY MIL-GAL (J) BY TEMP-1.
    IF WATER-SOLD > 0 THEN
                        DIVIDE TEMP-1 BY WATER-SOLD GIVING TEMP-1
                        ADD .005 TO TEMP-1
                        ELSE MOVE ZERO TO TEMP-1.
    IF TEMP-1 < 0 THEN SUBTRACT .01 FROM TEMP-1.
    MOVE TEMP-1 TO COLS (J).
    ADD TEMP-1 TO C-TOT (J).
    IF J = 1 THEN ADD .01 TO C-TOT (1).
    IF WU-NAME = 'KE' AND J = 3 THEN
              COMPUTE S-TOT (2) = POSIT (10, 6) - S-TOT (1)
              MOVE S-TOT (2) TO COLS (3)
              COMPUTE C-TOT (3) = C-TOT (7) - (C-TOT (1) +
                                 C-TOT (2)).
    ADD TEMP-1 TO S-TOT (1).
LOAD-TOTALS.
    ADD 1 TO J.
    MOVE C-TOT (J) TO COLS (J).
WRITE-WATER-PRODUCED.
    MOVE 'RE' TO LTR-OUT.
    MOVE   'VENUE PRODUCING WATER (MG)' TO NAME-OUT.
    MOVE ZERO TO J.
    ADD .005 TO WATER-SOLD.
    MOVE WATER-SOLD TO COLS (7), TEMP-2.
    MOVE 100 TO PERC (7).
    PERFORM LOAD-WATER 6 TIMES.
    PERFORM WRITE-DATA-LINE-A.
    PERFORM WRITE-DATA-LINE-C.
    PERFORM WRITE-DATA-LINE-B.
    MOVE '  ' TO LTR-OUT.
    MOVE ZERO TO J.
    PERFORM ZERO-SUB-TOTALS THRU ZERO-TOTALS.
    PERFORM SKIP-LINE 2 TIMES.
    GO TO CALCULATE-UNIT-COSTS.
LOAD-WATER.
    ADD 1 TO J.
    ADD .005 TO MIL-GAL (J).
    MOVE MIL-GAL (J) TO COLS (J), TEMP-1.
    PERFORM VARI-AND-PERCENT.
CALCULATE-UNIT-COSTS.
    MOVE 'UNIT COSTS BY ZONE:' TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE ZEROS TO POSIT (1, 6), POSIT (2, 6), POSIT (7, 6),
                  POSIT (8, 6), POSIT (9, 6), POSIT (10, 6).
    IF ZONES > 7 THEN MOVE 7 TO ZONES.
    PERFORM LOAD-UNIT-COSTS   VARYING I FROM 1 BY 1 UNTIL
                                    I GREATER THAN 10.
```

```
     MOVE '2' TO RPT-FLAG.
     GO TO WRITE-MATRIX.
 LOAD-UNIT-COSTS.
     IF WATER-SOLD > 0 THEN DIVIDE POSIT (I, 7) BY WATER-SOLD
                         GIVING TEMP-1
                         ADD .005 TO TEMP-1
                         ELSE MOVE ZERO TO TEMP-1.
     MOVE TEMP-1 TO POSIT (I, 7).
     IF I < 7 ADD TEMP-1 TO SS-TOT (7).
     IF I < 9 ADD TEMP-1 TO  S-TOT (7).
     IF I < 10 THEN ADD TEMP-1 TO C-TOT (7)
                ELSE MOVE C-TOT (7) TO POSIT (10, 7).
     PERFORM LOAD-COLS THRU LOAD-CONTD VARYING J FROM 1 BY 1 UNTIL
                                J GREATER THAN ZONES.
 LOAD-COLS.
     IF I < 3 OR > 6 THEN GO TO LOAD-CONTD.
     IF MIL-GAL (J) > 0 THEN DIVIDE POSIT (I, J) BY
                          MIL-GAL (J) GIVING TEMP-1
                         ADD .005 TO TEMP-1
                          ELSE MOVE ZERO TO TEMP-1.
 LOAD-CONTD.
     MOVE TEMP-1 TO POSIT (I, J).
     IF I < 7 THEN ADD TEMP-1 TO SS-TOT (J).
     IF I < 9 THEN ADD TEMP-1 TO  S-TOT (J).
     IF I < 10 THEN ADD TEMP-1 TO C-TOT (J)
               ELSE MOVE C-TOT (J) TO POSIT (10, J).
*****
*
*            GENERAL SUBROUTINES
*
*****
 MOVE-SPACES.
     MOVE SPACES TO PRINT-LINE.
 PRINT-LINE-OUT.
     WRITE PRINT-DATA BEFORE 1.
     ADD 1 TO LINE-CT.
 SKIP-LINE.
     PERFORM MOVE-SPACES.
     PERFORM PRINT-LINE-OUT.
 PAGE-OVFLOW.
     IF LINE-CT NOT < MAX-LINE THEN
         PERFORM TOP-NEW-PAGE.
         PERFORM WRITE-PAGE-HEADING.
 ZERO-SUB-TOTALS.
     MOVE ZEROS TO SUB-SUB-TOTAL.
     MOVE ZEROS TO SUB-TOTAL.
 ZERO-TOTALS.
     MOVE ZEROS TO COL-TOTAL.
 TOP-NEW-PAGE.
     PERFORM MOVE-SPACES.
```

```
    WRITE PRINT-DATA BEFORE NEW-PAGE.
    MOVE PAGE-CT TO PAGE-OUT.
    MOVE 0 TO LINE-CT.
    ADD 1 TO PAGE-CT.
FILL-HEADINGS.
    MOVE DATE-IN TO DATE-OUT.
    MOVE SPACES TO Z-4, Z-5.
    MOVE 'ZONES 1..3' TO Z-OUT.
    IF WU-NAME EQUAL 'CO' THEN
            MOVE '       ZONE  4' TO Z-4
            MOVE '       ZONE  5' TO Z-5
            MOVE 'ZONES 1..5' TO Z-OUT.
    MOVE FISCAL-YR TO FISC-YR.
    MOVE 'MONTHLY '     TO RPT-PD.
    IF RPT-PERIOD = '2' THEN MOVE 'QUARTER '     TO RPT-PD.
    IF RPT-PERIOD = '3' THEN MOVE 'HALF YR '     TO RPT-PD.
    IF RPT-PERIOD = '4' THEN MOVE 'ANNUAL '      TO RPT-PD.
    MOVE SPACES TO WKS-OUT.
    IF NO-WKS = '1' MOVE '( 4 WKS)' TO WKS-OUT.
    IF NO-WKS = '2' MOVE '( 5 WKS)' TO WKS-OUT.
    IF NO-WKS = '3' MOVE '(13 WKS)' TO WKS-OUT.
    IF NO-WKS = '4' MOVE '(26 WKS)' TO WKS-OUT.
    IF NO-WKS = '5' MOVE '(52 WKS)' TO WKS-OUT.
    MOVE PAGE-CT TO PAGE-OUT.
    MOVE TITLE-IN TO TITLE-OUT.
WRITE-PAGE-HEADING.
    MOVE HEADING-1 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-2 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-3 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-6 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    PERFORM SKIP-LINE 2 TIMES.
    MOVE HEADING-4 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
    MOVE HEADING-5 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT;
    PERFORM SKIP-LINE.
    IF PAGE-CT EQUAL 2 THEN MOVE 'FUNCTION COSTS FOR PERIOD:'
                                 TO PRINT-LINE
              ELSE MOVE 'FUNCTION COSTS YEAR TO DATE:'
                                 TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
WRITE-DATA-LINE-A.
    MOVE DATA-LINE-A TO PRINT-LINE.
    PERFORM PRINT-LINE-OUT.
WRITE-DATA-LINE-C.
    MOVE DATA-LINE-C TO PRINT-LINE.
```

```
      WRITE PRINT-DATA BEFORE 0.
  WRITE-DATA-LINE-8.
      MOVE DATA-LINE-6 TO PRINT-LINE.
      PERFORM PRINT-LINE-OUT.
  VARI-AND-PERCENT.
      MULTIPLY 100 BY TEMP-1.
      IF TEMP-2 > 0 DIVIDE TEMP-2 INTO TEMP-1 ELSE
                                   MOVE ZERO TO TEMP-1.
      MULTIPLY 1   BY TEMP-1 GIVING PERC (J) ROUNDED.
*****
*
*            FINI
*
*****
 READ-SORT-INPUT.
     READ COST-MATRIX-FILE AT END
         GO TO READ-SORT-INPUT-END.
     IF CC-NO EQUAL '4301' OR '4302' OR '4401'
             OR '4321' OR '4322' OR '4421'
                                 GO TO READ-SORT-INPUT.
     RELEASE SORT-INPUT FROM CM-REC.
     GO TO READ-SORT-INPUT.
 READ-SORT-INPUT-END.
     EXIT.
 WRITE-SORT-OUTPUT.
     RETURN FILE-SORT RECORD INTO INPUT-REC
         AT END GO TO WRITE-SORT-OUTPUT-END.
     WRITE INPUT-REC.
     GO TO WRITE-SORT-OUTPUT.
 WRITE-SORT-OUTPUT-END.
     EXIT.
 REWIND-FILE.
     CLOSE   SORTED-FILE.
     OPEN    INPUT   SORTED-FILE.
 CLOSE-FILES.
     CLOSE   CARD-IN, COST-MATRIX-FILE,
             SORTED-FILE, PRINT-OUT.
 E-O-J.
     STOP RUN.
  PGMNAME=WUASBUCM
.SYSIN      DD *
  ID DIVISION.
  PROGRAM-ID. WUASBUCM.
  AUTHOR. ACT SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN. JAN 1978
  DATE-COMPILED.
  REMARKS.    THIS PROGRAM BACKS UP THE CM FILE
              AND PRODUCES A COPY OF SAME.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-MATRIX-FILE
          ASSIGN TO DA-3330-I-CMFILE
          ACCESS MODE IS SEQUENTIAL
          RECORD KEY IS CM-NUMBER.
      SELECT TAPE-OUT
          ASSIGN TO UT-2400-S-TAPEOUT
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  COST-MATRIX-FILE
      BLOCK CONTAINS 5 RECORDS
      RECORD CONTAINS 80 CHARACTERS
      LABEL RECORDS ARE STANDARD
      DATA RECORD IS INPUT-REC.
  01  INPUT-REC.
      05  MATCH-CODE-IN.
          10  DELETE-POS     PIC X.
          10  FILLER         PIC X(3).
      05  CM-NUMBER.
          10  ACCT-NO-IN     PIC X(10).
          10  COST-CNTR-IN   PIC X(4).
          10  COST-CAT-IN    PIC X(2).
      05  AMOUNTS-IN OCCURS 6 TIMES.
          10  AMT-IN         PIC S9(8)V99.
```

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 FD  TAPE-OUT
     BLOCK CONTAINS 5 RECORDS
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE STANDARD
     DATA RECORD IS TAPE-REC.
 01  TAPE-REC                PIC X(80).
 FD  PRINT-OUT
     RECORD CONTAINS 133 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS PRINT-LINE.
 01  PRINT-LINE.
     05  FILLER              PIC X.
     05  PRINT-DATA          PIC X(132).
 FD  CARD-IN
     RECORD CONTAINS 80 CHARACTERS
     LABEL RECORDS ARE OMITTED
     DATA RECORD IS INPUT-CARD.
 01  INPUT-CARD.
     05  DATE-IN.
         10  BACKUP-OPTION PIC X(7).
         10  FILLER        PIC X(11).
     05  TITLE-IN            PIC X(24).
     05  FILLER              PIC X(38).
 WORKING-STORAGE SECTION.
 77  LINE-CT                 PIC 99 COMP VALUE 0.
 77  PAGE-CT                 PIC 9(4) COMP VALUE 0.
 77  MAX-LINE                PIC 99 COMP VALUE 56.
 77  I                       PIC 9.
 77  BACKUP-FLAG             PIC 9 VALUE 0.
 77  ACCT-HOLD               PIC X(10) VALUE SPACES.
 77  ACCT-COUNT              PIC 999 VALUE ZERO.
 01  HEAD-1.
     05  FILLER              PIC X(53) VALUE SPACES.
     05  FILLER              PIC X(27) VALUE 'COST ALLOCATION FILE BA
-                                            'CKUP'.
     05  FILLER              PIC X(52) VALUE SPACES.
 01  HEAD-2.
     05  FILLER              PIC X(13) VALUE 'DATE ENDING: '.
     05  DATE-OUT            PIC X(18).
     05  FILLER              PIC X(34) VALUE SPACES.
     05  FILLER              PIC X(3)  VALUE 'FOR'.
     05  FILLER              PIC X(54) VALUE SPACES.
     05  FILLER              PIC X(6)  VALUE 'PAGE: '.
     05  PAGE-OUT            PIC Z(4).
 01  HEAD-3.
     05  FILLER              PIC X(55) VALUE SPACES.
     05  TITLE-OUT           PIC X(24).
     05  FILLER              PIC X(53) VALUE SPACES.
 01  HEAD-4.
     05  FILLER              PIC X(2)  VALUE SPACES.
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        05  FILLER            PIC X(35) VALUE '******** K E Y   F I E
                                              'L D ********'.
        05  FILLER            PIC X(28) VALUE SPACES.
        05  FILLER            PIC X(7)  VALUE 'CURRENT'.
        05  FILLER            PIC X(4)  VALUE SPACES.
        05  FILLER            PIC X(8)  VALUE 'PREVIOUS'.
        05  FILLER            PIC X(5)  VALUE SPACES.
        05  FILLER            PIC X(7)  VALUE 'CURRENT'.
        05  FILLER            PIC X(5)  VALUE SPACES.
        05  FILLER            PIC X(7)  VALUE 'YEARLY '.
        05  FILLER            PIC X(4) VALUE SPACES.
        05  FILLER            PIC X(7)  VALUE 'CURRENT'.
        05  FILLER            PIC X(5)  VALUE SPACES.
        05  FILLER            PIC X(8)  VALUE 'PREVIOUS'.
    01  HEAD-5.
        05  FILLER            PIC X(2)  VALUE SPACES.
        05  FILLER            PIC X(10) VALUE 'ACCOUNT NO'.
        05  FILLER            PIC X(4)  VALUE SPACES.
        05  FILLER            PIC X(9)  VALUE 'COST CNTR'.
        05  FILLER            PIC X(4)  VALUE SPACES.
        05  FILLER            PIC X(8)  VALUE 'COST CAT'.
        05  FILLER            PIC X(4)  VALUE SPACES.
        05  FILLER            PIC X(10) VALUE 'MATCH CODE'.
        05  FILLER            PIC X(16) VALUE SPACES.
        05  FILLER            PIC X(4)  VALUE 'COST'.
        05  FILLER            PIC X(4)  VALUE SPACES.
        05  FILLER            PIC X(10) VALUE 'MONTH COST'.
        05  FILLER            PIC X(2)  VALUE SPACES.
        05  FILLER            PIC X(10) VALUE 'COST (YTD)'.
        05  FILLER            PIC X(4)  VALUE SPACES.
        05  FILLER            PIC X(6)  VALUE 'BUDGET'.
        05  FILLER            PIC X(2)  VALUE SPACES.
        05  FILLER            PIC X(12) VALUE 'BUDGET (YTD)'.
        05  FILLER            PIC X(2)  VALUE SPACES.
        05  FILLER            PIC X(9)  VALUE 'YEAR COST'.
    01  DATA-LINE.
        05  FILLER            PIC X(2).
        05  CM-NUMBER-1.
            10  ACCT-NO       PIC X(10).
            10  FILLER        PIC X(6).
            10  COST-CNTR     PIC X(4).
            10  FILLER        PIC X(10).
            10  COST-CAT      PIC X(2).
        05  FILLER            PIC X(10).
        05  MATCH-CODE        PIC X(4).
        05  FILLER            PIC X(12).
        05  AMOUNTS OCCURS 6  TIMES.
            10  AMT           PIC -(9).--.
    01  ACCOUNT-ACCUM.
        05  ACCT-ACCUM        PIC S9(8)V99 OCCURS 6 TIMES.
```

```
 01   SUBTOTAL.
      05   SUBS                   PIC S9(8)V99 OCCURS 6 TIMES.
 PROCEDURE DIVISION.
 OPEN-FILES.
      OPEN INPUT  COST-MATRIX-FILE,
                  CARD-IN,
            OUTPUT PRINT-OUT.
 FILL-HEADING.
      READ CARD-IN AT END
           PERFORM ERROR-CARD-IN
           GO TO CLOSE-FILES.
      MOVE DATE-IN TO DATE-OUT.
      MOVE TITLE-IN TO TITLE-OUT.
      READ CARD-IN AT END
           GO TO HOUSEKEEP.
      IF BACKUP-OPTION NOT = 'BACK-UP' THEN
           GO TO HOUSEKEEP.
 OPEN-BACKUP-FILE.
      MOVE 1 TO BACKUP-FLAG.
      OPEN   OUTPUT TAPE-OUT.
 HOUSEKEEP.
      MOVE ZEROS TO SUBTOTAL, ACCOUNT-ACCUM.
 WRITE-HEADINGS.
      ADD 1 TO PAGE-CT.
      MOVE PAGE-CT TO PAGE-OUT.
      MOVE 0 TO LINE-CT.
      PERFORM MOVE-SPACES.
      WRITE PRINT-LINE BEFORE NEW-PAGE.
      MOVE HEAD-1 TO PRINT-DATA.
      PERFORM PRINT-LINE-OUT.
      MOVE HEAD-2 TO PRINT-DATA.
      PERFORM PRINT-LINE-OUT.
      MOVE HEAD-3 TO PRINT-DATA.
      PERFORM PRINT-LINE-OUT.
      PERFORM MOVE-SPACES.
      PERFORM PRINT-LINE-OUT 2 TIMES.
      MOVE HEAD-4 TO PRINT-DATA.
      PERFORM PRINT-LINE-OUT.
      MOVE HEAD-5 TO PRINT-DATA.
      PERFORM PRINT-LINE-OUT.
      PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
 INIT-ACCT-HOLD.
      PERFORM READ-INPUT-REC.
      MOVE ACCT-NO-IN TO ACCT-HOLD.
      GO TO START-BACKUP.
 READ-INPUT-REC.
      READ COST-MATRIX-FILE AT END
           GO TO WRITE-SUBTOTAL.
 START-BACKUP.
      IF ACCT-NO-IN NOT = ACCT-HOLD
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```
            THEN PERFORM SUBTOTAL-ACCT.
        ADD 1 TO ACCT-COUNT.
        MOVE ACCT-NO-IN TO ACCT-NO.
        MOVE COST-CNTR-IN TO COST-CNTR.
        MOVE COST-CAT-IN TO COST-CAT.
        MOVE MATCH-CODE-IN TO MATCH-CODE.
        PERFORM MOVE-AMOUNTS VARYING I FROM 1 BY 1 UNTIL I = 7.
        MOVE DATA-LINE TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
        IF LINE-CT > MAX-LINE
            THEN PERFORM WRITE-HEADINGS.
        IF BACKUP-FLAG = 1 THEN
            MOVE INPUT-REC TO TAPE-REC
            WRITE TAPE-REC.
        GO TO READ-INPUT-REC.
    MOVE-SPACES.
        MOVE SPACES TO PRINT-LINE.
    PRINT-LINE-OUT.
        WRITE PRINT-LINE BEFORE 1.
        ADD 1 TO LINE-CT.
    MOVE-AMOUNTS.
        MOVE AMT-IN (I) TO AMT (I).
        ADD AMT-IN (I) TO SUBS (I) ACCT-ACCUM (I).
    MOVE-SUBTOTALS.
        MOVE SUBS (I) TO AMT (I).
    ERROR-CARD-IN.
        MOVE '*** NO DATE/TITLE CARD *** JOB ABORTED'
            TO PRINT-DATA.
            PERFORM PRINT-LINE-OUT.
    SUBTOTAL-ACCT.
        MOVE SPACES TO DATA-LINE.
        PERFORM MOVE-ACCT-SUB VARYING I FROM 1 BY 1 UNTIL I = 7.
        IF (ACCT-COUNT > 1) AND (ACCOUNT-ACCUM NOT = ZERO) THEN
            MOVE 'SUB TOTAL ' TO ACCT-NO.
            MOVE DATA-LINE TO PRINT-DATA.
            PERFORM PRINT-LINE-OUT.
        MOVE 1 TO ACCT-COUNT.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
        MOVE ZEROS TO ACCOUNT-ACCUM.
        MOVE ACCT-NO-IN TO ACCT-HOLD.
    MOVE-ACCT-SUB.
        MOVE ACCT-ACCUM (I) TO AMT (I).
    WRITE-SUBTOTAL.
        PERFORM MOVE-SPACES THRU PRINT-LINE-OUT 2 TIMES.
        MOVE SPACES TO DATA-LINE.
        PERFORM MOVE-SUBTOTALS VARYING I FROM 1 BY 1 UNTIL I = 7.
        MOVE 'TOTAL      ' TO ACCT-NO.
        MOVE DATA-LINE TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
    CLOSE-FILES.
    CLOSE    COST-MATRIX-FILE,
             CARD-IN,
             PRINT-OUT.
CLOSE-TAPE-FILE.
    IF BACKUP-FLAG NOT = 1 THEN
        GO TO E-O-J.
    CLOSE TAPE-OUT.
E-O-J.
    STOP RUN.
```

```
      PGMNAME=WUASUCAD
.SYSIN    DD  *
  ID DIVISION.
  PROGRAM-ID. WUASUCAD.
  AUTHOR. ACC SYSTEMS, INC
          SUITE 200
          807 W MORSE BLVD
          WINTER PARK, FL 32789.
  DATE-WRITTEN. MARCH 1978.
  DATE-COMPILED.
  REMARKS.    THIS PROGRAM READS A CARD IMAGE OF A
              COST MATRIX RECORD AND EITHER CHANGES,
              ADDS OR DELETES THE RECORD.
  ENVIRONMENT DIVISION.
  CONFIGURATION SECTION.
  SOURCE-COMPUTER. IBM-370.
  OBJECT-COMPUTER. IBM-370.
  SPECIAL-NAMES.
      C01 IS NEW-PAGE.
  INPUT-OUTPUT SECTION.
  FILE-CONTROL.
      SELECT CARD-IN
          ASSIGN TO UR-2540R-S-CARDIN
          ACCESS MODE IS SEQUENTIAL.
      SELECT PRINT-OUT
          ASSIGN TO UR-1403-S-PRINTOUT
          ACCESS MODE IS SEQUENTIAL.
      SELECT COST-MATRIX-FILE
          ASSIGN TO DA-3330-I-CMFILE
          ACCESS MODE IS RANDOM
          RECORD KEY IS CM-NUMBER
          NOMINAL KEY IS CM-NOMINAL.
      SELECT TAPE-IN
          ASSIGN TO UT-2400-S-TAPEIN
          ACCESS MODE IS SEQUENTIAL.
  DATA DIVISION.
  FILE SECTION.
  FD  COST-MATRIX-FILE
      BLOCK CONTAINS 5 RECORDS
      RECORD CONTAINS 80 CHARACTERS
      LABEL RECORDS ARE STANDARD
      DATA RECORD IS CM-REC.
  01  CM-REC.
      05  MATCH-CODE.
          10  DELETE-POS      PIC X.
          10  FILLER          PIC X(3).
      05  CM-NUMBER.
          10  ACCT-NO         PIC X(10).
          10  COST-CNTR          PIC X(4).
          10  COST-CAT           PIC X(2).
```

```
        05  AMOUNTS.
            10  AMTS                    PIC S9(8)V99  OCCURS 6 TIMES.
    FD  TAPE-IN
        BLOCK CONTAINS 5 RECORDS
        RECORD CONTAINS 80 CHARACTERS
        LABEL RECORDS ARE STANDARD
        DATA RECORD IS TAPE-REC.
    01  TAPE-REC                    PIC X(80).
    FD  CARD-IN
        RECORD CONTAINS 80 CHARACTERS
        LABEL RECORDS ARE OMITTED
        DATA RECORD IS INPUT-REC.
    01  INPUT-REC.
        05  DATE-IN                 PIC X(18).
        05  TITLE-IN                PIC X(24).
        05  FILLER                  PIC X(38).
    01  INPUT-REC-1.
        05  MATCH-CODE-IN           PIC X(4).
        05  INPUT-KEY.
            10  ACCT-IN             PIC X(10).
            10  COST-CNTR-IN        PIC X(4).
            10  COST-CAT-IN         PIC X(2).
        05  AMOUNTS-IN              PIC X(60).
    01  INPUT-REC-2.
        05  FILLER                  PIC X(20).
        05  AMTS-IN                 PIC S9(8)V99 OCCURS 6 TIMES.
    FD  PRINT-OUT
        RECORD CONTAINS 133 CHARACTERS
        LABEL RECORDS ARE OMITTED
        DATA RECORD IS PRINT-LINE.
    01  PRINT-LINE.
        05  FILLER                  PIC X.
        05  PRINT-DATA              PIC X(132).
    WORKING-STORAGE SECTION.
    77  PAGE-CT                     PIC 9(4)  COMP VALUE 0.
    77  LINE-CT                     PIC 9(2)  COMP VALUE 0.
    77  MAX-LINE                    PIC 9(2)  COMP VALUE 56.
    77  INPUT-CT                    PIC 9(4)V99 VALUE 0.
    77  ADD-CT                      PIC 9(4)V99 VALUE 0.
    77  CHANGE-CT                   PIC 9(4)V99 VALUE 0.
    77  DELETE-CT                   PIC 9(4)V99 VALUE 0.
    77  ERROR-CT                    PIC 9(4)V99 VALUE 0.
    77  CM-NOMINAL                  PIC X(16) VALUE SPACES.
    77  I                           PIC 99    COMP VALUE 0.
    77  UPDATE-FLAG                 PIC 9 VALUE 0.
    77  INPUT-DEVICE                PIC 9 VALUE 0.
    01  HEAD-1.
        05  FILLER                  PIC X(54) VALUE SPACES.
        05  FILLER                  PIC X(24) VALUE 'CHANGES ADDS AND DELETE
                                              'S'.
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           05  FILLER          PIC X(54) VALUE SPACES.
       01  HEAD-2.
           05  FILLER          PIC X(6)  VALUE 'DATE: '.
           05  DATE-OUT        PIC X(18).
           05  FILLER          PIC X(41) VALUE SPACES.
           05  FILLER          PIC X(2)  VALUE 'ON'.
           05  FILLER          PIC X(55) VALUE SPACES.
           05  FILLER          PIC X(6)  VALUE 'PAGE: '.
           05  PAGE-OUT        PIC Z(4).
       01  HEAD-3.
           05  FILLER          PIC X(54) VALUE SPACES.
           05  TITLE-OUT       PIC X(24).
           05  FILLER          PIC X(54) VALUE SPACES.
       01  HEAD-4.
           05  FILLER          PIC X(58) VALUE SPACES.
           05  FILLER          PIC X(16) VALUE 'COST MATRIX FILE'.
           05  FILLER          PIC X(58) VALUE SPACES.
       01  HEAD-5.
           05  FILLER          PIC X(7)  VALUE 'ACCOUNT'.
           05  FILLER          PIC X(6)  VALUE SPACES.
           05  FILLER          PIC X(4)  VALUE 'COST'.
           05  FILLER          PIC X(3)  VALUE SPACES.
           05  FILLER          PIC X(4)  VALUE 'COST'.
           05  FILLER          PIC X(2)  VALUE SPACES.
           05  FILLER          PIC X(5)  VALUE 'MATCH'.
           05  FILLER          PIC X(6)  VALUE SPACES.
           05  FILLER          PIC X(7)  VALUE 'CURRENT'.
           05  FILLER          PIC X(5)  VALUE SPACES.
           05  FILLER          PIC X(8)  VALUE 'PREVIOUS'.
           05  FILLER          PIC X(9)  VALUE SPACES.
           05  FILLER          PIC X(3)  VALUE 'YTD'.
           05  FILLER          PIC X(8)  VALUE SPACES.
           05  FILLER          PIC X(6)  VALUE 'YEARLY'.
           05  FILLER          PIC X(9)  VALUE SPACES.
           05  FILLER          PIC X(3)  VALUE 'YTD'.
           05  FILLER          PIC X(6)  VALUE SPACES.
           05  FILLER          PIC X(8)  VALUE 'PREVIOUS'.
           05  FILLER          PIC X(7)  VALUE SPACES.
           05  FILLER          PIC X(8)  VALUE 'COMMENTS'.
           05  FILLER          PIC X(8)  VALUE SPACES.
       01  HEAD-6.
           05  FILLER          PIC X(7)  VALUE ' NUMBER'.
           05  FILLER          PIC X(5)  VALUE SPACES.
           05  FILLER          PIC X(6)  VALUE 'CENTER'.
           05  FILLER          PIC X(2)  VALUE SPACES.
           05  FILLER          PIC X(3)  VALUE 'CAT'.
           05  FILLER          PIC X(3)  VALUE SPACES.
           05  FILLER          PIC X(4)  VALUE 'CODE'.
           05  FILLER          PIC X(7)  VALUE SPACES.
           05  FILLER          PIC X(6)  VALUE 'AMOUNT'.
           05  FILLER                 PIC X(7)  VALUE SPACES.
           05  FILLER                 PIC X(5)  VALUE 'MONTH'.
           05  FILLER                 PIC X(9)  VALUE SPACES.
           05  FILLER                 PIC X(6)  VALUE 'AMOUNT'.
           05  FILLER                 PIC X(7)  VALUE SPACES.
           05  FILLER                 PIC X(6)  VALUE 'BUDGET'.
           05  FILLER                 PIC X(7)  VALUE SPACES.
           05  FILLER                 PIC X(6)  VALUE 'BUDGET'.
           05  FILLER                 PIC X(8)  VALUE SPACES.
           05  FILLER                 PIC X(4)  VALUE 'YEAR'.
           05  FILLER                 PIC X(24) VALUE SPACES.
       01  DATA-LINE.
           05  ACCT-OUT               PIC X(10).
           05  FILLER                 PIC X(3).
           05  COST-CNTR-OUT          PIC X(4).
           05  FILLER                 PIC X(4).
           05  COST-CAT-OUT           PIC X(2).
           05  FILLER                 PIC X(3).
           05  MATCH-CODE-OUT         PIC X(4).
           05  FILLER                 PIC X.
           05  AMOUNTS-OUT OCCURS 6 TIMES.
               10  CODE-NAME          PIC X(2).
               10  AMTS-OUT           PIC -(8).--.
           05  FILLER                 PIC X(3).
           05  COMMENT                PIC X(20).
       PROCEDURE DIVISION.
       OPEN-FILES.
           OPEN I-O    COST-MATRIX-FILE.
                INPUT  CARD-IN,
                OUTPUT PRINT-OUT.
       FILL-HEADING.
           READ CARD-IN AT END GO TO WRITE-RECORD-COUNTS.
           MOVE DATE-IN TO DATE-OUT.
           MOVE TITLE-IN TO TITLE-OUT.
       WRITE-HEADINGS.
           ADD 1 TO PAGE-CT.
           MOVE 0 TO LINE-CT.
           MOVE PAGE-CT TO PAGE-OUT.
           PERFORM MOVE-SPACES.
           WRITE PRINT-LINE BEFORE NEW-PAGE.
           MOVE HEAD-1 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-2 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-3 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-4 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES.
           PERFORM PRINT-LINE-OUT 2 TIMES.
           MOVE HEAD-5 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           MOVE HEAD-6 TO PRINT-DATA.
           PERFORM PRINT-LINE-OUT.
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
       HOUSEKEEP.
           MOVE SPACES TO DATA-LINE.
       UPDATE-FILE-YES-OR-NO.
           READ CARD-IN AT END GO TO WRITE-RECORD-COUNTS.
           IF ACCT-IN NOT = 'UPDATE     ' THEN
               ADD 1 TO INPUT-CT
               GO TO START-UPDATE.
           MOVE 1 TO UPDATE-FLAG.
       TEST-FOR-INPUT-DEVICE.
           READ CARD-IN AT END
           MOVE 1 TO INPUT-DEVICE
               PERFORM OPEN-TAPE-FILE
               GO TO READ-INPUT.
      *
      *
      *    THE ABOVE CONDITION IS FOR TAPE INPUT USED
      *    TO RECREATE THE CM FILE FROM THE BACKUP TAPE
      *
      *
      *    THE FOLLOWING IS FOR CARD INPUT USED TO
      *    MAKE CHANGES, ADDS, OR DELETES TO THE CM-FILE.
      *
      *
           ADD 1 TO INPUT-CT.
           GO TO START-UPDATE.
       READ-INPUT.
           IF INPUT-DEVICE = 0 THEN
               PERFORM READ-CARD-IN
           ELSE PERFORM READ-TAPE-IN.
           ADD 1 TO INPUT-CT.
       START-UPDATE.
           MOVE ACCT-IN TO ACCT-OUT.
           MOVE COST-CNTR-IN TO COST-CNTR-OUT.
           MOVE COST-CAT-IN TO COST-CAT-OUT.
           IF (MATCH-CODE-IN = SPACES) AND (AMOUNTS-IN = SPACES) THEN
               GO TO DELETE-RECORD.
           MOVE MATCH-CODE-IN TO MATCH-CODE-OUT.
           EXAMINE AMOUNTS-IN REPLACING ALL ' ' BY '0'.
           PERFORM MOVE-AMTS-IN-TO-AMTS-OUT VARYING I
               FROM 1 BY 1 UNTIL I = 7.
       VERIFY-KEY.
           IF (ACCT-IN = SPACES) OR (COST-CNTR-IN = SPACES) OR
                   (COST-CAT-IN = SPACES) OR (MATCH-CODE-IN = SPACES)
               THEN MOVE '*** INVALID KEY ***' TO COMMENT
                   MOVE DATA-LINE TO PRINT-DATA
```

```
            PERFORM PRINT-LINE-OUT
            PERFORM MOVE-SPACES THRU PRINT-LINE-OUT
            ADD 1 TO ERROR-CT
            GO TO READ-INPUT.
READ-CM-FILE.
    MOVE INPUT-KEY TO CM-NOMINAL.
    READ COST-MATRIX-FILE INVALID KEY
        GO TO ADD-RECORD.
CHANGE-RECORD.
    MOVE '*** NEW RECORD ***' TO COMMENT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    MOVE MATCH-CODE TO MATCH-CODE-OUT.
    PERFORM MOVE-CM-AMTS-OUT VARYING I
        FROM 1 BY 1 UNTIL I = 7.
    MOVE '*** OLD RECORD  ***' TO COMMENT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    PERFORM PAGE-OVFLOW.
    ADD 1 TO CHANGE-CT.
    MOVE MATCH-CODE-IN TO MATCH-CODE.
    PERFORM MOVE-AMTS-IN-TO-DISK-AMTS VARYING I
        FROM 1 BY 1 UNTIL I = 7.
    IF UPDATE-FLAG = 1 THEN
        REWRITE CM-REC.
    MOVE SPACES TO DATA-LINE.
    GO TO READ-INPUT.
ADD-RECORD.
    MOVE '*** RECORD ADDED ***' TO COMMENT.
    MOVE DATA-LINE TO PRINT-DATA.
    PERFORM PRINT-LINE-OUT.
    PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
    MOVE ACCT-IN TO ACCT-NO.
    MOVE COST-CNTR-IN TO COST-CNTR.
    MOVE COST-CAT-IN TO COST-CAT.
    MOVE MATCH-CODE-IN TO MATCH-CODE.
    PERFORM MOVE-AMTS-IN-TO-DISK-AMTS VARYING I
        FROM 1 BY 1 UNTIL I = 7.
    MOVE CM-NUMBER TO CM-NOMINAL.
    IF UPDATE-FLAG = 1 THEN
        WRITE CM-REC.
    PERFORM PAGE-OVFLOW.
    ADD 1 TO ADD-CT.
    MOVE SPACES TO DATA-LINE.
    GO TO READ-INPUT.
DELETE-RECORD.
    MOVE '*** RECORD DELETED *' TO COMMENT.
    MOVE DATA-LINE TO PRINT-DATA.
        PERFORM PRINT-LINE-OUT.
```

```
           PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
           ADD 1 TO DELETE-CT.
           PERFORM PAGE-OVFLOW.
           IF UPDATE-FLAG = 0 THEN
               GO TO READ-INPUT.
           MOVE INPUT-KEY TO CM-NOMINAL.
           READ COST-MATRIX-FILE INVALID KEY
               GO TO READ-INPUT.
           MOVE ZEROS TO MATCH-CODE, AMOUNTS.
           MOVE HIGH-VALUE  TO DELETE-POS.
           REWRITE CM-REC.
           GO TO READ-INPUT.
       PAGE-OVFLOW.
           IF LINE-CT NOT < MAX-LINE THEN
               PERFORM WRITE-HEADINGS.
       MOVE-SPACES.
           MOVE SPACES TO PRINT-LINE.
       PRINT-LINE-OUT.
           WRITE PRINT-LINE BEFORE 1.
           ADD 1 TO LINE-CT.
       MOVE-AMTS-IN-TO-AMTS-OUT.
           MOVE AMTS-IN (I) TO AMTS-OUT OF AMOUNTS-OUT (I).
       MOVE-CM-AMTS-OUT.
           MOVE AMTS (I) TO AMTS-OUT OF AMOUNTS-OUT (I).
       MOVE-AMTS-IN-TO-DISK-AMTS.
           MOVE AMTS-IN (I) TO AMTS (I).
       READ-CARD-IN.
           READ CARD-IN AT END
               GO TO WRITE-RECORD-COUNTS.
       READ-TAPE-IN.
           READ TAPE-IN AT END
               GO TO WRITE-RECORD-COUNTS.
           MOVE TAPE-REC TO INPUT-REC.
       OPEN-TAPE-FILE.
           OPEN INPUT   TAPE-IN.
       WRITE-RECORD-COUNTS.
           MOVE SPACES TO DATA-LINE.
           PERFORM MOVE-SPACES.
           WRITE PRINT-LINE BEFORE NEW-PAGE.
           MOVE 'I' TO CODE-NAME OF AMOUNTS-OUT (1).
           MOVE 'A' TO CODE-NAME OF AMOUNTS-OUT (2).
           MOVE 'C' TO CODE-NAME OF AMOUNTS-OUT (3).
           MOVE 'D' TO CODE-NAME OF AMOUNTS-OUT (4).
           MOVE 'E' TO CODE-NAME OF AMOUNTS-OUT (5).
           MOVE INPUT-CT  TO AMTS-OUT OF AMOUNTS-OUT (1).
           MOVE ADD-CT     TO AMTS-OUT OF AMOUNTS-OUT (2).
           MOVE CHANGE-CT TO AMTS-OUT OF AMOUNTS-OUT (3).
           MOVE DELETE-CT TO AMTS-OUT OF AMOUNTS-OUT (4).
           MOVE ERROR-CT  TO AMTS-OUT OF AMOUNTS-OUT (5).
           MOVE DATA-LINE TO PRINT-DATA.
```

```
          PERFORM PRINT-LINE-OUT.
          PERFORM MOVE-SPACES THRU PRINT-LINE-OUT.
          IF UPDATE-FLAG = 1 THEN
              MOVE '*** COST MARTIX FILE UPDATED ***' TO PRINT-DATA
          ELSE MOVE '*** COST MATRIX FILE NOT UPDATED ***' TO
              PRINT-DATA.
          PERFORM PRINT-LINE-OUT.
      CLOSE-TAPE-FILE.
          IF INPUT-DEVICE = 0 THEN
              GO TO CLOSE-FILES.
          CLOSE TAPE-IN.
      CLOSE-FILES.
          CLOSE   COST-MATRIX-FILE,
                  CARD-IN,
                  PRINT-OUT.
      E-O-J.
          STOP RUN.
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